Social Capital of the Urban Poor in Bangladesh

Implications for Affordable Housing

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Abstract

This study aims to investigate the nature and extent of 'social capital' of the urban poor in Bangladesh. Major theories of social capital have been reviewed for a general understanding of the subject, while a review of other relevant literature has also helped develop measures of aspects of social capital: social networks, trust and cooperation. Broader literature on poverty and urban housing in Bangladesh are also reviewed. These measures have been used in a structured questionnaire survey. Approximately1800 households were interviewed using this questionnaire in a two-stage sample design process, in which 18 primary sampling units (PSU) were selected from three categories of cities (one is the capital city, one from the metropolitan cities and one from the secondary cities). Then 100 households were selected from each of the 18 PSUs, including 11 'poor neighbourhoods' (informal or 'slum' areas)' and 7 'comparator neighbourhoods'.

The socio-economic and demographic information from the survey responses have been analysed to understand the profile of the study population. The data on social capital have been analysed in two stages: (a) using descriptive statistics, and (b) using the Probit/Logit and structural analytic approaches. In the former case, the analysis looks particularly at the socio-economic vulnerabilities of the urban poor affecting social capital, as well as the nature and extent of different kinds of social networks, trust and cooperation. The Probit/Logit and structural analysis explores the direct and indirect relationships between various socioeconomic characteristics of urban poor households and individual behavioural outcomes (trust and cooperation).

The analysis suggests that the nature and extent of social capital of the poor are somewhat distinctive; the poor groups are more interdependent on their neighbours, so that their social capital primarily relies on their ties with them. These findings suggest that the higher level of trust and cooperation among neighbours may address some of the critical issues in affordable housing and slum redevelopment policies in Bangladesh. This implication is discussed through a suggested quasi-market approach that may help achieve financial feasibility of affordable housing supply. The approach may contribute to the current 'market enabling' housing policies of the country *as well as* providing pointers to the international development agencies for investment in housing for the urban poor in Bangladesh or elsewhere.

Dedicated to my only sister, Meherunnesa, who died on 23 February 2016, at the age of 21.

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ACADEMIC REGISTRY

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Table of contents

List of tables

List of figures

Abbreviations

ADB	Asian Development Bank
BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka (£1=100 BDT approx.)
CDA	Chittagong Development Authority
cdf	cumulative density function
CUP	The Coalition for the Urban Poor
CUS	Center for Urban Studies
DfID	Department for International Development, UK
GDP	Gross Domestic Product
HH	Households
HHH	Household Head
HWU	Heriot Watt University
HSC	Higher Secondary Certificate
ICR	Intelligent Character Recognition
IMF	International Monetary Fund
InM	Institute for Inclusive Finance and Development
INGO	International Non-Government Organisation
KDA	Khulna Development Authority
LIDCs	Low Income Developing Countries
MFI	Microfinance Institution
NHA	National housing Authority
PPP	Purchasing Power Parity
RAJUK	Dhaka Development Authority
NGO	Non-Government Organisation
OLS	Ordinary Least Square
PRSP	Poverty Reduction Strategy Papers
PSU	Primary Sampling Unit
SEM	Structural Equation Modelling
SSC	Secondary School Certificate
T&T	Telephone and Telecommunication Department
WB	The World Bank
WDB	Water Development Board
2SLS	Two-stage Least Square
3SLS	Three Stage Least Square
£	(British) Pound Sterling
$	US Dollar

Chapter 1: Overview of Research Aims and Objectives

1.1 Introduction

Although it is one of the world's poorest countries, Bangladesh has exhibited impressively rapid economic growth over the last 20 years.The current GDP growth rate is more than 6.5% annually. However, the contemporary growth paradigm and political economy of Bangladesh have arguably enabled a particular group to direct the growth of the market economy in particular directions. Growth under such an economic structure has undermined the 'quality' of development through an unfair distribution of income and wealth (Sobhan, 2010). Clearly there is a small group of business people who are doing very well. There are also quite large groups 'in the middle' who are benefiting to some extent from greater economic opportunities as well as from other policies like education and healthcare. However, a significant proportion of the population has been marginalised (Matin, 2014); these are landless and assetless poor people concentrated in densely populated urban slums where the per person housing space can be as small as 1.2sq. meters (Rahman, 2001; GoB&ADB, 1996). Such socioeconomic inequality potentially generates a number of social concerns.

The fact is that some Bangladeshis are poorer than is generally thought (Chen and Ravallion, 2010). The contemporary growth paradigm does little to guarantee a fair distribution of resources, so inequality between rich and poor in Bangladesh continues; the Gini-coefficient, which was .43 in 1995, was .46 in 2010 (BBS, 2010b; Ferdousi and Dehai, 2014). As a result, the prevalence of urban poverty has become a distinctive feature of cities across the country. In addition, the established trend of urbanisation accompanying economic development is associated with the dangers of climate change, particularly from rising sea levels and river erosion. These changes may well lead to an additional threat to the poor populations, which are moving into the cities, resulting in

ever larger slums (Annez and Linn, 2010). This influx of the poor into cities has been accompanied by the lack of a minimum standard of housing (Begum, 2007b).

The scarcity of urban land is acute in many cities in developing countries like Bangladesh; therefore urban public space is a contested resource, with various interests defining its shape, its accessibility and its suitability for livelihood-related use (Hye, 2014). In such circumstances, the urban poor command little in the way of land and services to allow them a reasonable standard of living. This situation threatens the progress of multidimensional anti-poverty measures, which perceive development to be a sustained improvement in the ability to meet basic human needs (Streeten, 1981).

Neither a market-enabling approach (which is reflected in the country's Poverty Reduction Strategy Papers (PRSP) and promoted by the WB and IMF), nor the forceful eviction of the urban poor from land (Khan, 2012a; Hye, 2014) addresses the real problem of proper distribution of resources. Housing markets tend to follow the logic of maximum profit margins to the developers, focusing on the housing demands of the higher-income population, and this process could never meet the housing needs of the urban poor. A typical explanation of this failure is that the poor simply cannot afford the housing supplied via the usual market. On the other hand, forced evictions from their slum dwellings push the poor into even deeper poverty, destroying the little economic progress they may have made through various national and international efforts. Such evictions have displaced the urban poor to new locations and have potentially disrupted any *social capital* that they have managed to build through social exchanges and social relationships at work (Stanley and Currie, 2006). This destruction of economic progress, combined with the disruption of social capital, can arguably have serious negative consequences for those trying to achieve sustainable poverty reduction.

1.2 Government and NGO interventions in urban poverty

Previously, government interventions in Bangladesh were implemented to provide proper housing for the urban poor. However, such initiatives are both isolated and very few compared to the scale and needs of the urban poor. Also, these interventions often failed to reflect the aspirations of the targeted poor; they tried to resettle them either in rural areas or on the outskirts of the city, and thus failed to address labour market needs (Khan, 2012b). Consequently, a large majority refused to move to the new locations, and many

of them who did move simply came back to be nearer to job opportunities. Nonetheless, if the new location was considered 'suitable', political and administrative interference went ahead, resulting in misguided distribution of land and housing to the targeted poor (Khan, 2012a).

The limitations of the public sector have prompted Non-Governmental Organisations (NGOs) and Micro-Finance Institutions (MFIs) to take an active role in socio-economic development (Mahmud, 2008). Many of the NGOs/MFIs are working primarily to facilitate income generation, to improve health and education, and to provide legal support to the disadvantaged poor. However, these activities are interplayed between most of the NGOs, but they have little involvement in providing proper housing for the poor.

A considerable number of studies argue for, and evaluate the positive impact of 'microfinance', particularly looking at how such a model facilitates the ability of the poor to increase their income and accumulate assets through entrepreneurship development and employment generation (Khandker, 2001; Wright, 2000; Yunus, 1999; Nelson et al., 1996). It is true that NGOs' activities in Bangladesh, particularly in the microfinance sector, has helped reduce social vulnerability to some extent, and has improved the social welfare of the poor, but this has taken place primarily in rural rather than urban areas (Zaman, 2000; Wright, 2000; Khandker, 1998). Moreover, those gains are arguably fragile, and they help little in sustainable urban poverty reduction.

However, the positive impact of microfinance may imply a higher role for the NGOs. The studies suggest that the ways in which NGO activities are run, and the usefulness of their methods of achieving success, may indicate the notion of 'social capital'(Ito, 2003). The group-based credit of the 'Grameen Bank', focused on collective social behaviour/responsibility, is considered a driving factor for the explosive growth of microfinance in Bangladesh (Dowla, 2006a). Therefore, the effectiveness of social capital (collective behaviour and relationships of trust) may be a potentially critical factor in measures to achieve a proper standard of housing by and for the urban poor in Bangladesh.

1.3 Social capital and housing for the urban poor

Notwithstanding the possibility of the negative impact (e.g. social exclusion, anti-social activities) of social capital, it might be argued to be a major non-market force that may offer a potential pathway to affordable housing for the urban poor in Bangladesh. The poor may, in many instances, be relatively strong in collective social action, just as they are weak regarding financial resources. The World Bank study hints that social capital is a pervasive ingredient and determinant of progress in development projects as well as being an important tool for poverty reduction (WB, 2001). The study insists that social capital can affect income and welfare through improving the 'management of common resources' and 'energising federation'. Such evidence encourages the argument that social capital may be useful to some extent in the market solution for the provision of affordable housing to the poor.

Social capital is grounded in social relations, which is the interplay of a complex set of socio-economic variables. The precise notion of social capital is based on the differing but influential theories of Bourdieu, Coleman and Putnam. However, the theoretical proposition of social capital is also deeply rooted in social class and cultural norms and values. Social capital could be seen as social virtues built on trust (Fukuyama, 1996; Knack and Keefer, 1997a) and cooperation (Coleman, 1988a), which are facilitated by social networks and social interactions (Bourdieu, 1986; Putnam, 1995). Those aspects of social capital are generated from intensive social exchanges linked to social class.

A small section of the literature has explored empirically the underlying relationship between social capital and positive (as well as some negative) socio-economic outcomes. Goldin and Katz (2001) explored the contribution of social capital to secondary education. Fukuyama (1996) analysed how the social capital of trust could reduce the costs of transactions. However, the social capital phenomena informing these theoretical propositions and empirical evidence come largely from western contexts.

1.4 Scope for the research

Both public and private sector interventions have failed to address the root causes of urban poverty in Bangladesh, and are wholly focused on the association between housing and sustainable poverty reduction. Thus, the urban poverty-reduction policy has barely appreciated the challenging issue of affordable housing supplies to the urban poor. Again,

the policies of the authorities concerned have neglected the perspectives of the urban poor themselves. The urban policy in Bangladesh has a long tradition of focusing on investment in physical and human capital interventions; this has arguably underplayed the importance of social capital. Social capital might complement those interventions, since it might support measures aimed at affordable housing sustainable urban poverty reduction in Bangladesh.

Major barriers to affordable housing for the urban poor include unaffordability, land scarcity, higher land values and low capital. Looking at the problems, the existing housing condition of the urban poor might be improved through:

- developing the physical condition of the existing dwelling units
- extending dwellings
- attaching or improving basic utility services
- improving security of tenure
- redevelopment of sections of settlements with medium- and higher-density housing of modest specifications
- enabling the construction of relatively affordable medium-density housing on serviced land.

However, interventions for specific groups would differ depending on the nature of the problem.

Social capital of the poor might arguably address some of the barriers and affect the ability to achieve different types of housing improvement. Collective trust and cooperation might help realise local resources (e.g. by land pooling and mobilising capital as well as labour) as well as facilitating fair distribution of land and housing. Those social virtues might also help with the financial viability of the projects. In both cases, the role of intermediaries are perhaps crucial.

The potential role of intermediaries to mobilise social capital has never been explored. The non-profit intermediary might play an important role in mobilising local resources and negotiating various options for the supply of affordable housing. These roles entail collective efforts in small-parcel land pooling, bargaining for subsidised land, generating capital from the secondary market, technical support for building construction, infrastructure, management, and loan recovery mechanisms. All of these require the

intermediary and necessitate the engagement of the poor in the whole process of housing delivery.

Various options regarding the housing of the urban poor are being suggested by academics, field practitioners and development organisations. The World Bank (WB) and the Asian Development Bank (ADB) have been experimenting with a variety of ways to provide housing and infrastructure to the urban poor; however, no effective model has emerged. The literature on housing of the urban poor has largely advocated for a non-market solution involving free distribution of land and housing to the poor. But those actions require huge public resources which are unaffordable for a country like Bangladesh. Also, such distribution is fraught with large-scale corruption and inefficient use of scarce land (Khan, 2012a).

While many of the studies on social capital have been conducted in a broader range of countries, primarily in the West, very few studies have focused on particular groups such as the marginalised urban poor in Bangladesh. Also, most studies on social capital have focused on the economic implications on health, education and income; few have addressed the implications on the supply of affordable housing for the poor of Bangladesh. This study intends to addresses that gap.

1.5 Research aims and questions

This study aims to investigate the nature and extent of social capital based on the primary data collected from 1,800 households across three cities in Bangladesh. Then the key findings on social capital are intended to inform the affordable housing policy in a quasi-market context. The study addresses the following specific research questions to achieve those aims:

1. How is the socio-economic condition of the urban poor linked to their socio-economic vulnerability?
2. What is the nature and extent of social capital of the urban poor?
3. How is individual experience of social capital (e.g. trust, cooperation) affected by the context in terms of collective social capital at neighbourhood level?

4. How might social capital address the major market and non-market barriers to affordable housing for the urban poor in Bangladesh?

1.6 Study hypotheses

Presumably, a certain level of social capital exists among the urban poor in Bangladesh. This capital could be useful in addressing barriers to the delivery of affordable housing to (or by) the poor. However, there still remains a question about how much social capital could be mobilised and how much would be needed, for different levels of investment in this delivery.

There is also the question of the physical form of housing investment, and how far this necessitates moving, temporarily or permanently; this particularly relates to the issue of how feasible that is, given that employment is precarious. In some informal settlement upgrading, individual families can improve their own plot using a self-build approach. But given the population density, land scarcity and capital market for housing finance in Bangladesh, this approach might well lead to an inefficient use of land. Such considerations would suggest a medium- or high-rise building approach in a necessarily collaborative undertaking, requiring a complex two-tier tenure that would ensure efficient use of scarce land *as well as* the financial viability of the project.

In such circumstances, the study conceives four principal hypotheses in line with the research aims:

1. The urban poor have limited access to socioeconomic opportunities, and this inflicts persistent poverty and social vulnerability on them
2. Poverty and social vulnerability of the urban poor presumably facilitate a certain level of interdependency
3. Such interdependency among the poor may offer a level of social capital (trust and cooperation) which has implications for neighbourhood development
4. In particular, such social capital might address the market and non-market barriers of affordable housing supply to the urban poor; however, there is a need for an ‘intermediary to facilitate and negotiate the issues surrounding the process.

1.7 Rationale of the study

Given the current financial weakness of the Government of Bangladesh, the non-market solution to the informal housing of the urban poor is perhaps implausible. Thus financial viability is presumably critical to affordable housing interventions for two particular reasons: the need to attract capital from public, private and international money market sources; and the effective functioning of the particular housing market, based on efficiency and equity, to meet the need.

The current pure market policies of housing supply seem unresponsive to the housing needs of the urban poor in Bangladesh; therefore there is a need for an alternative market solution to improve the housing situation. Quasi-market housing policies may be pragmatic, where social capital can be exploited to address some of the market problems as well responding to the housing needs of the poor.

The study is based on a field survey conducted on 1,800 households across three cities of Bangladesh. The findings from the field data could add value to the pragmatic notion of social capital in the context of the urban poor in Bangladesh. Moreover, implications of such findings for affordable housing policies could attract international development agencies such as WB, DfID (UK Department for International Development) and ADB, working for the livelihood development of the urban poor. In conclusion, the study intends to shed light on ways of achieving proper housing for the poor; an outcome that could potentially contribute to sustainable urban poverty reduction.

1.8 Organisation of the thesis

1.8.1 Chapter 2: Literature Review

Chapter 2 reviews the relevant international literature on social capital, and more specific literature on housing of the urban poor, particularly in Bangladesh. It provides an overview and insight into the existing knowledge relevant to this study. It has particularly helped in the preparation of the structured questionnaire which is used to carry out the field survey for this study. The review has also helped to inform the choice of analytical approaches underpinning the quantitative investigation into the research hypotheses. In addition, a brief review of housing policy and the literature on housing, informs the knowledge base upon which the implications of social capital are examined.

1.8.2 Chapter 3: Methodology

Chapter 3 provides a detailed discussion on the methodology employed for conducting this research. It sets out the philosophical assumptions underlying both the research design and methodology. The research methodology is presented under four main headings:

- *Participants:* the details on the study population are presented in this section. The study cities, the Primary Sampling Units (PSUs), and the sample 'poor' and 'comparator' households are discussed.
- *Measures:* the section enlists the variables adopted from the literature on social capital. In addition, it includes demographic and socio-economic variables used in this study that are linked to social class and social capital.
- *Procedure:* this section discusses the data collection process used for the study. It involves the selection of study, Primary Sampling Units (PSUs) and sample households.
- *Analysis:* the analysis encompasses the methods used for analysis of data in the different chapter of this thesis.

1.8.3 Chapter 4: Study Areas Profile

Chapter 4 gives an overview of the study population, as well as the study neighbourhoods, based primarily on the field data, but with contextual and comparator information from other published sources. The chapter consists of four primary sections:

- *Urban poverty dynamics:* this section discusses the growing presence of the urban poor in Bangladesh.
- *Household characteristics:* the household characteristics related to demography, education, household income and assets, household expenditure, household saving and debt are analysed.
- *Neighbourhood characteristics:* relevant issues include land ownership patterns, availability of utility facilities, and the costs of living in urban poor neighbourhoods.

- *Migration:* the section discusses the origin and pattern of migration of the urban poor. It also analyses the reasons for and costs of forced migration inflicted on the poor.

The chapter draws a comparison between the 'poor' neighbourhoods and their 'comparator' areas across three study cities where appropriate.The analysis has also tried to link with the previous studies carried out in this particular field, in order to have a broader perspective on the subject discussed.

It addresses research questions 1 set out for this study, which were aimed at providing a general understanding about socioeconomic characterstics of the study population. The chapter also provides a context for the rest of the analysis of social capital addressed in chapter 5, 6 and 7. It also helps to contextualise the issues underlying affordable housing for the urban poor in Bangladesh discussed in chapter 8. In addition to these more specific aims, the chapter will attempt to provide a detailed general description of the urban poor in Bangladesh.

1.8.4 Chapter 5: The nature and extent of social capital: a descriptive analysis

This chapter analyses the responses to social capital in a descriptive manner, and this informs a general understanding of the nature and extent of the social capital of the urban poor in Bangladesh. The descriptive analysis of social capital underpins the analysis of trust and cooperation that are addressed in Chapter 6 and 7, and so the chapter addresses research question 2 on the nature and extent of social capital.

1.8.5 Chapter 6: The behavioural outcome of social capital: trust

This chapter addresses research question 3. It analyses trust in the bonding and bridging/linking networks in relation to the network structure, income and living period of households. The analysis is primarily based on the estimates revealed from the Ordinary Least Square (OLS) regressions, which help to identify neighbours as an important social network of the urban poor. Individuals' trust in neighbours is analysed at the end of this chapter, using Probit and Logit estimation.

1.8.6 Chapter 7: The behavioural outcome of social capital: cooperation

This chapter also addresses research question 3. It analyses individuals' cooperation in relation to the network structure, trust, income and living period of households separately, for the bonding capital. As with the treatment of trust, the analysis is based on the estimates revealed from the OLS regressions.

Structural Analysis: in this section the researcher provides a structural analysis of social capital, which interlinks the different effects of individuals' social behaviour and neighbourhood/group-level effects. The individual social capital outcomes are explored using a structural analysis of various aspects of social capital; this reveals the direct, indirect and correlated effects of various social and economic factors on individual cooperation.

1.8.7 Chapter 8: Implications of social capital for housing the urban poor in Bangladesh

This chapter offers a policy direction for affordable housing to the urban poor, which is informed by social capital. The major market and non-market barriers for affordable housing delivery are discussed. How social capital could address those issues is brought into focus through the concept of a quasi-market approach, which might provide insights for Bangladesh's national housing policy, as well as for the international development agencies.

1.8.8 Chapter 9: Conclusion

This chapter examines the extent of the study's achievement of its research aims and objectives. How such achievement might contribute to the literature, and to stakeholders interested in the policies offered, is discussed. The knowledge acquired through conducting this study, that might help advance the research field, is noted. The limitations of the research, which might have affected the inferences made from the findings, are drawn out. Finally, it offers indications of future research development.

Chapter 2: Social Capital, Urban Poverty and Housing: A Literature Review

2.1 Introduction

The review of literature is an important aspect of conducting any research. An integrative review contains the research results and critiques available in the literature (Jaidka et al., 2013). It also informs about the methods applied in conducting similar studies, and about the controversies and key contributors (Bryman, 2012a). Thus, this chapter is intended to inform the study of the existing knowledge relating to the topic, concepts and theories. The following discussion provides a review, primarily of social capital, but also of the issues of poverty and housing in relation to the urban poor in Bangladesh.

This chapter reviews the theoretical aspects of social capital and urban poverty underpinning the framework of analysis for this study. As stated above, the major aims of this research are:

(i) to investigate the nature and extent of the social capital of the urban poor in Bangladesh,
(ii) to explore the potential of social capital to inform affordable housing policies for the urban poor in Bangladesh.

These aims have driven the review of the relevant literature on social capital, urban poverty and housing. This chapter is divided into two parts. Section 2.2 reviews the literature on social capital, including major theories, its development, and issues concerning measures, criticisms and implications for social wellbeing. Section 2.3 reviews the literature related to urban poverty and housing with particular focus on Bangladesh.

2.2 Review of social capital

The concept of social capital can be defined as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationship of mutual acquaintance or recognition" (Bourdieu, 1986: 248). Social capital has attracted much attention in sociology in the last two or three decades; however, the topic can be found in 1960s literature linked to both sociology and anthropology. Max Weber and Karl Marx are generally acknowledged to have brought the issue to the public's attention at the end of the 19th century (Woolcock, 1998b). Theorists from different academic disciplines have modified the term to fit their own disciplinary perspectives; hence one expert's view has been criticised by others with regard to what could be the causes or effects in understanding the notion of social capital. Sociologists have led the theoretical development, whereas others have extended the implied notion to different aspects of social capital (Bourdieu, 1986; Lin, 2001; Coleman, 1990; Ports, 2000). These developments have improved the meaning of social capital, adding scholarship to the notion of social virtues (Woolcock, 1998b). Because of its implications in socioeconomic development, social capital has also been a subject of study in other disciplines.

A few theorists have been particularly influential in defining social capital. Pierre Bourdieu, James S. Coleman and Robert Putnam are among those frequently acknowledged by most authors who have studied social capital. Other scholars and sources, such as Fukuyama, Lin, Burt and the World Bank, are also important for their contribution to the shaping of the concept. However, the definition of social capital varies widely in terms of its implication for development policies (Knack and Keefer, 1997b). Moreover, debates also arise from different perspectives relating to whether social capital refers to an individual subject or whether it is a collective issue (Bourdieu, 1986; Coleman, 1990). In the following section, I review the major theories of social capital that are particularly relevant to this study.

2.2.1 Important theories of social capital

There are two major camps in social capital literature. One, led by Bourdieu, argues that social capital is formed within the norms of social class, where the dominant class gains access to economic and/or cultural capital through mutual recognition and the acknowledgement of others (Bourdieu, 1986).

According to Bourdieu, social capital is made up of social obligations and connections. More precisely, he argues in his paper that social capital consists of collective assets shared by individuals with defined groups and boundaries, obligations of exchange and mutual recognition. The group provides credit from the collectively-owned capital to its members. He considers social capital as an implicit form of economic capital. In his analysis of the 'form of social' in the reproduction of advantage within the social class, he took neo-classical assumptions of economics which are closely linked to Becker (1964) theory of human capital. However, his theory is based on the analytic approaches of social theory.

Bourdieu argues that the social order facilitates the dominant class to maintain the social hierarchy. His argument is primarily based on the network size and the amount of resources available in the networks, which are common among the members within a particular social class. His argument relies largely on the political and economic capital in the individual network in a social group.

Another camp, led by James Coleman and Robert Putnam, argues that social capital is a collective resource available to the members of a group. According to their argument, the quality (strength) of social capital depends on each individual's efforts and actions, which ultimately form the collective social virtues, such as trust and cooperation, in a group. This argument assumes that social capital can be generated in a small group such as family or a religious community, or among schoolmates or tradesmen. The argument highlights that social ties promote the norms of reciprocity and mutual obligation. Unlike Bourdieu, Coleman and Putnam view the origin and development of social capital as an incidental phenomena arising out of social interactions. Coleman (1988a) defines social capital as an aspect of the social structure which facilitates the individual's actions.

Individual agents within a society collectively create social structure, whereas the social norms and culture allow individuals scope to reshape society. Coleman uses social capital to explore the differences in educational outcomes among children attending different schools. He argues that action is required to gain resources from social capital embedded in social exchanges. However, through analysing the social system using rational choice/behavior theory, he reveals that his assumptions have been imported from economics.

According to the above statements, individuals, through their behaviour, collectively create structural norms, whereas structural factors facilitate the social interaction and exchanges that shape collective social virtues. The nature of the relationship between

individuals and society, as defined by Coleman, can be explained by the following diagram:

$$Individual\ action \frac{generate \rightarrow}{\leftarrow allow} Structural\ factors$$

Individuals collectively create structural norms, whereas structural norms facilitate individual exchanges; these, in turn, shape collective social virtues such as trust and cooperation. Coleman's view is clearly more useful than Bourdieu's when applied to the urban poor in Bangladesh.

Following Coleman's concept, Putnam defines social capital as the social networks that generate values (Putnam, 2001: see p. 18-19). He has argued that social capital is formed within associations among a group of people; the interactions and exchanges among members facilitate and promote the development of collective norms of reciprocity, which are necessary for maintaining collective social wellbeing (Putnam, 1995; Putnam, 1993). Putnam has extended his concept to civic and political engagement in society, and measures it based on membership of groups such as sporting clubs, parent-teacher associations, unions and neighbourhood groups or organisations. He argues that the negative economic performance of a country is a consequence of declining social capital.

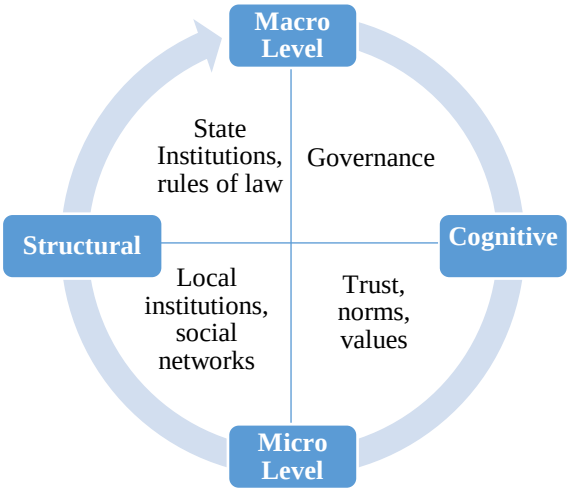
Putnam believes that the cause of a decline in civic engagement is correlated to the development of television, which reduces social connectedness. However, his views on the decline of social capital have been strongly criticised on the grounds that he does not take account of other social and political forces which might influence his findings (Boggs, 2001). It is important to understand whose social capital is being eroded, rather than focusing on the total stock (Li et al., April 2005). Held (1996: reported in Gray, Shaw & Farrington 2006) argues that social capital is not in decline, rather that it is changing through globalisation and use of the internet.

Fukuyama (1996) has also reinforced the recognition of the *collective* nature of social capital. He has defined social capital as shared social norms and values that generate collective social virtues in the form of trust. He has insisted that such social virtue is important for collective co-operation on a broader scale (e.g. states and large corporations). He argues that members of a social organisation learn how to behave, and that this is reflected in reciprocity and mutual expectation among the members. He also

claims that the costs of social exchanges are less in those societies where social trust is present, and that this is one of the ways in which it supports higher economic growth.

Lin (2001) has argued that information, influence, social credentials and reinforcement are four elements of social capital. Frequent social interactions help members gain access to information and grant influence and credentials to members of the society. This formulation of social capital seems closer to the Bourdieu's concept, i.e. more relevant to higher social class. Lin has explained why these elements are essential for accomplishing social actions, which are not attainable by physical capital.

The World Bank (2001) has defined social capital from its practical manifestations in development interventions. It has added insight into the notion of 'dimensions' of social capital, explaining that social capital produces different dimensions as it develops within the macro and micro social structures. Again, within the social boundary, social capital has structural dimensions. The state institutions and rules of law constitute the macro-level structural dimension, whereas the social institutions and norms are the micro-level structural dimensions. This can be shown by the following diagram.



Source: Adapted from WB (2001)

Figure 2.1: Dimensions of generating social capital

Moreover, social capital has cognitive dimensions, such as state governance at the macro level (which is about conscious decisions) and at the micro level of social trust. It has been argued that social capital is a pervasive ingredient and determinant in development policies (WB, 2001). Such argument is linked to protection against corruption and ensuring transparency through the participation of the local community (refer toCallahan, 2005). The *World Bank Development Report 1997* notes:

> …study of villages in rural Tanzania found the households in villages with high levels of social capital... have higher adjusted incomes per capita than do households in villages with low levels of social capital. When other non-social capital determinants are controlled for, there also appears to be a strong correlation between a village's wellbeing and its level of social capital. (p. 115)

This note suggests that social association, which is formed on the basis of the informal rules, norms and values of the society that facilitate coordinated action for members, enables cooperative ventures in development. This implies that social capital is important to economic development. Development policies need to appreciate the role of social capital for effective development through improvements in management of shared resources (Fedderke et al., 1999). However, such an approach might lead to a double-bind for development if it relies on family, clan or neighbourhood networks, because these networks are often fueled by political clientelism and corrupt payments.

Naughton (2013) introduced new ideas about social capital, linking it to 'socio-spatial' attributes. In her study, social capital is viewed through the filter of neo-classical economic assumptions, thereby challenging the existing pro-market social capital theories, which have overlooked spatial aspects. She insists that spatial context-specific and context-explicit social capital provides a deeper perspective than the existing theories. She claims that social capital varies from one place to another, so spatial aspects have been proposed for inclusion in any study on social capital.

Akcomak (2011) has systematically reviewed the social capital literature across disciplines. He found no agreement between disciplines in how they treat social capital. He suggests the need for strong links among disciplines towards a deepening, rather than a broadening, of the understanding of social capital.

From the theoretical context, it is perhaps clear that social capital is grounded in social relationships, which involve an interplay of a complex set of socio-economic variables

surrounding an individual. The notion of social capital is deeply connected with social and cultural norms and values: (a) some cultures value social cooperation and trust more than others; (b) social cooperation and trust will only arise if certain cultural values are present/strong; (c) there may be a symbiotic, self-reinforcing relationship between cooperative behaviour and social/cultural norms. Nonetheless, the formation of social capital relies on individual efforts (Coleman, 1988b) as well as on collective social norms (Bourdieu, 1986; Brehm and Rahn, 1997). Moreover, social capital can be perceived as a composite form of different aspects that may be separated out as: (i) socio-economic characteristics of individuals (markers of social class) that provide context in the formation of social capital, such as networks, trust or cooperation (Akerlof and Kranton, 2000; Bourdieu, 1986); (ii) social networks, which are the primary manifestation of social capital (Bourdieu, 1986; Putnam, 1995); (iii) trust (Fukuyama, 1996; Knack and Keefer, 1997a); and (iv) cooperation (Coleman, 1988a), which can be viewed as the outcomes of social capital. So, all of these aspects of social capital are generated through social transactions that may provide feedback to each other. In the following section, I address some of the more interesting developments in this literature, in line with the aim of this study.

2.2.2 Key points

Bourdieu, Coleman, Putnam, Fukuyama and Lin share the view that social capital relies strongly on social relationships, as well as on the resources embedded in social relationships and social structure. More precisely, social capital is generated within a set of structural factors, such as social position, network intensity and diversity. Social exchanges ensure that capital grows at an individual or collective level, through utilising embedded resources in the networks. That means the resources are present and useful for purposive actions; whereas social relations and social networks facilitate such actions.

There are primarily two motives for actions: expressive action and instrumental action. Expressive action is employed by the agents to create a visible, noticeable message or signal, typically for defense purposes and to maintain resources. Its typical motive is to minimise loss in social exchanges. In contrast, instrumental action is less about symbolism and more about actual results, and is typically employed to gain and expand resources (Lin, 2001).

This means that agents undertake action to maximise gains from exchanges. The urban poor are assumed to have limited or no choice for expressive action, because of limited economic power. If the poor act to express a demand (e.g. through a demonstration), this has little effect on the government's decision. Their voting power to elect the government might be influenced by the corrupt money. Arguably their structural and cultural position limits them to instrumental action. The rational choice theory of actions for social and economic behaviours posits that, though their scope is limited, the poor tend to exert more efforts in instrumental actions to maintain social relations and networks (Goode, 1997).

2.2.3 Further theoretical issues

It is argued that social interactions facilitate key social outcomes (e.g. trust and cooperation) at various levels (Tenzin and Natsuda, 2016). Interactions start at home with the parents (family), and this helps to build strong relationships and provide a basic norm of social behaviour (Inkpen and Tsang, 2005; Parcel and Bixby, 2016). However, the maintenance of such familial relationship is less costly (it may not require regular interactions) (Roberts and Dunbar, 2011). Other formal and informal social institutions, such as educational institutions or playing fields, provide or reinforce the norms of shared social behaviour. Yet, the nature of individuals' social behaviour may vary because of the inherent nature of their social orientations (White et al., 2009). Rothstein and Uslaner (2005) argue that social inequality is linked to differential social norms of trust in people or public institutions, which may affect individuals' social behaviours. They illustrate their argument with an example of the Nordic countries, where social trust is higher compared to other countries lacking social equality. There are, however, other characteristics of these Nordic societies, such as ethnic homogeneity and a relatively stable, non-feudal background, which may affect this. Greater equality may not be the only cause, or it may be a consequence, of social trust and other background factors. In the context of political reform in Thailand, Callahan (2005) argues that social capital can reproduce, and that the democratic achievement of the country is intimately tied up with the dynamics of social capital and corruption. The outcomes of social capital are thus contextualised in the varied political and cultural spectrum, and the norms of trust and reciprocity would vary across contexts (Fukuyama, 2001; Cheong et al., 2007).

Social context is very much linked to other aspects of social capital: network structure (type, size and strength of networks), trust and cooperation. Higher socio-economic status

may help facilitate higher social networks (Bourdieu, 1986). Cox (1995) links social capital with social cohesion. She analyses what holds society together, and what might constitute a truly civil society in which people can trust each other and face future challenges together. Giddens (1991) insists that social capital is a concept of institutional development and cultural systems, which enable social participation of members of that society. He argues that social capital offers an effective tool for social change in the context of globalisation and political and cultural change. This 'institutional' approach may map onto Putnam's 'civil society' organisations; however, it may also be a conservative tool that resists change.

The concept of trust is both vague and used variably in the literature, although it is generally understood as a latent psychological phenomenon, some combination of feeling and judgement and more or less positive (Bhattacharya et al., 1998; Oye, 1985). Frequent interactions and strong social relations may potentially develop higher interpersonal trust among the members in a society (Lewis and Weigert, 1985). Putnam (2001; 1993) defines trust in terms of civic trust. While some researchers use this definition, they tend in practice to view civic trust as a generalisation of many possible forms of trust (Fukuyama, 1996; Francois and Zabojnik, 2005). Co-operation is a more factual/behavioural outcome, referring to reciprocal activities (Buckley and Casson, 2010; Oye, 1985). Implicitly, to engage in cooperation, which involves reciprocal actions, is an act of putting trust into practice. Therefore, a positive relationship between trust and cooperation is expected.

2.2.3.1 Social class and social capital

Social class is an important basis for the analysis of social capital. An understanding of the social class of the study population is perhaps required to understand social capital. Though the specific criteria to determine social class may never be achieved, the literature of social class could provide an idea. According to Weber (1924),

> We may speak of a "class" when (1) a number of people have in common a specific causal component of their life chances, insofar as (2) this component is represented exclusively by economic interests in the possession of goods and opportunities for income, and (3) is represented under the conditions of the commodity or labor markets. This is "class situation….

> It is the most elemental economic fact that the way in which the disposition over material property is distributed among a plurality of people, meeting competitively in the market for the purpose of exchange, in itself creates specific life chances....
>
> But always this is the generic connotation of the concept of class: that the kind of chance in the market is the decisive moment which presents a common condition for the individual's fate. Class situation is, in this sense, ultimately market situation. (pp 917-28)

Marx's theory views social class in relation to the impact on the material wellbeing – both 'exploitation' and 'life chances' – of inequalities in access to social opportunities. The concept underlies to the process in distribution of wealth. Conflicts of interest between classes are generated not simply by what people have, but also by what people do with what they have. The concept of exploitation, therefore, points attention to conflicts within production, not simply conflicts in the market (Wright, 2003).

Also, the notion of class can be understood in terms of job classification (DiMaggio, 1997; Bourdieu, 1986; Bernstein, 2002). This might imply that it is largely rooted in the economic thresholds and linked to education and culture; historically it was more linked to property and to 'power' i.e. position in the military/aristocratic hierarchy. Social class in the context of Bangladesh can be understood through Marx and Weber's perspective of social class, suggesting that the higher the class, the more secure the position in society and the less vulnerable to random events.

The people in a particular social class have similar socio-economic and cultural backgrounds, which define their social values and social class. Because of this similarity, members of a particular social group are more likely to stay socially close and to interact within the same social group, which facilitates social relations and networks (DiMaggio, 1997; Akerlof and Kranton, 2000).

Socio-economic and cultural contexts of groups vary with a number of social and economic factors; so these factors are expected to affect social capital at both individual and group levels. Factor like household assets, the nature of jobs held by the heads of household, household income, household expenditure, and a number of other socio-economic opportunities and challenges that might indicate the household's social class are expected also to affect aspects of social capital. Again, the group might have some common factors that might also affect the individual's social capital. Therefore, social

capital would have relationships with the other forms of capital – human capital (education), economic capital (wealth) or cultural capital. *Human capital* broadly corresponds to any stock of knowledge or characteristics a worker has that contributes to his or her "productivity". This largely underlines the acquired skills; some of the differences in earnings across workers that are not accounted for by skills differences (e.g. year of schooling) alone, but linked to other characteristics including (school) quality, training, and attitudes towards work (Becker, 2009). *Cultural capital* refers to capital beyond economic means. Such capital may be generated in three forms: in the embodied state, e.g. in the form of long lasting disposition of mind and body; in the objectified state, in the form of cultural goods (e.g.pictures, books, instrument, etc.); and in the form of the institutionalised state, as seen in the case of educational qualification (Bourdieu, 1986). *Economic capital* simply refers to the financial means (e.g. income, assests) required to ensure financial transactions in market. Abbott & Sapsford (2005) also include 'symbolic capital', by which they mean prestige and personal qualities, as another way to try to understand social class.

Social interactions and social exchanges are more likely when a group of people are living together, which facilitates social relations (although it can also generate friction). Such social relations are crucial in the formation of social capital (Manski, 2000; Weerdta and Derconb, 2006; Broecka and Derconb, 2011). The social institutions for social interactions are thus important, but they vary in different social contexts; so variation in social networks and ties, trust and cooperation, is expected. The socio-economic circumstances of a particular class, which facilitate social interactions and relationships, are expected to affect the social behaviour of individuals (Hall, 2008; Akerlof and Kranton, 2000; Fiske and Markus, 2012).

Argument 1: A relationship exists between the socio-economic variables and other forms of social capital (the manifestation and outcomes).

We address this argument in Appendix B where, to understand in the socio-economic vulnerability of the urban poor in Bangladesh, we analyse how various social vulnerabilities are linked to the economic uncertainty of the urban poor. The relationships between the socio-economic attributes of the urban poor, the network structure and the outcomes of social capital are shown in chapters 5 and 6 respectively.

2.2.3.2 Network structure and social capital

Social network theory

Social network theory has a longer history of academic interest than social capital does. Social networks are said to be about linkages and connectedness (Phillipson et al., 2004: p. 2). Social network theory has been used to look at impacts of informal ties, the impact of particular configurations of social networks, the role of networks and support, the implications of social networks for public policy and, more recently, the link between social networks and social exclusion (Phillipson et al., 2004).

Crow (2004: 7) argues that the challenge for policymakers is to find ways to "enhance disadvantaged people's access to social networks that will empower them". He points out that networks relate to individuals rather than groups, and they may not necessarily be restricted to one's local community. Crow argues that reciprocity is not a necessary component of networks; for example, networks may provide status and respect. However, he does argue that it is important for trust to be present for the network to function; trust being particularly present in family networks. Networks vary along many variables, such as gender, age, geographical location and social class. Certainly some social networks may be antisocial (Forrest and Kearns, 2001), in that they may be formed for anti-social purposes; they may exercise undue control on their members, and social support in the group may be used to reinforce conformity, dependence and obligation.

In general, poor people with smaller social networks are more likely to have poorer health and wellbeing than those with larger social networks. A correlation is found between social capital and social wellbeing ((Wilkinson and Wilkinson, 2002: reported by Crow 2004). Middle class people are more likely than working class people to participate in community groups, voluntary associations and other semi-formal relationships (Black et al., 2002: reported by Crow 2004). This may be because middle class people are less likely than working class people to be immersed in local kinship networks, and are more likely to have employment-based networks.

Network structure

Stone (2001) offers a broader perspective on social capital, where it is important to understand the structure, including type, size and spread of networks, as well as a need to understand the issues of trust and reciprocity. Different networks create different types of

social capital (Stone et al., 2003). The network structure may be viewed as a manifestation of one's social capital, which includes the type, size and strength of social networks; different networks may generate different kinds of social outcomes (Stone et al., 2003; Burt, 2000; Montgomery, 1992). There are primarily three kinds of networks evident in the literature of social capital: bonding, bridging and linking.

Bonding social networks develop trust and reciprocity in closed social networks, such as the family, neighbourhood and perhaps at work, and assist with the process of 'getting by' on a daily basis. A bonding network is formed with people in close contact, such as family members, neighbours, friends, co-workers or community leaders. Frequent interactions between group members (e.g. a firefighting crew) help form this close relationship and denser ties, which are perhaps necessary for getting by each day (Nelson, 1989). Bonding generates closer and denser ties, but may lead to exclusionary practices as well.

Bridging social networks spread resources among networks, allowing people to 'get ahead' by accessing multiple networks and therefore resources and opportunities. Bridges are made between groups which are different in age, social position, ethnicity, or other features (Ferlander, 2007; Adler and Kwon, 2002). A bridging network is formed between more heterogeneous groups, where the connection is more fragile, but also more likely to foster social inclusion; this outcome contrasts with bonding networks, which may increase social exclusion (Schuller et al., 2000). A bridging network forms distant relationships with distant persons, and is generally more formal than a bonding network (Granovetter, 1983).

A linking social network is created through networks with those in authority or who have power, and who are useful for obtaining resources. These networks commonly involve institutional connections between individuals and community groups, which reach beyond community boundaries (Schuller et al., 2000). The manifestation and outcomes of social capital variables can be found more fully set out in Section 4 of Appendix A.

The manifestation of social capital through interactions and networks facilitates social outcomes such as trust and cooperation at various levels (Tenzin and Natsuda, 2016). Interactions and ties with parents provide a foundation of expected social outcomes (Inkpen and Tsang, 2005; Parcel and Bixby, 2016). Other outside, formal and informal social institutions, such as educational institutions and playing fields or clubs, provide a

shared norm of behavioural expectation. Nonetheless, the inherent nature of individual characteristics may influence social behaviour (White et al., 2009). Therefore, there are issues arising from the various socio-economic and inherited resources that together affect behavioural outcomes. Moreover, social inequality is related to social trust in both people and public institutions, and therefore affects social behaviour (Rothstein and Uslaner (2005). Social trust is argued to be higher in the people and public institutions where there is lower social inequality. Callahan (2005) suggests that civil and non-civil social capital can reproduce each other. He argues that the democratic achievement of a country is intimately tied up with the dynamics of social capital and corruption (in the context of the political reform in Thailand). The outcomes of social capital are thus contextualised in the varied political and cultural spectrum; the norms of trust and reciprocity would vary across contexts (Fukuyama, 2001; Cheong et al., 2007).

Argument 2: The individual network is potentially influenced by the interactions and broader social and economic context

This argument can be found in the analysis of relationships between various networks and socio-economic factors in Chapter 6 and 7.

2.2.3.3 Trust—the intermediate outcome of social capital

Trust might be considered as an intermediate outcome of social capital. The concept of trust is both a vague and a much-used variable in the literature. However, Putnam (1993) defines trust in terms of civic trust. Civic trust is generated in organisations of civil society and in the political regime. While some researchers use this definition, they tend in practice to view civic trust as generalising many other possible forms of trust. Putnam believes that trust takes a long time to develop; perhaps generations.

Trust recognises that we are exposed to risk and vulnerable to the effects of action taken by others, but entails an expectation that those others will not exploit this vulnerability (Humphrey and Schmitz, 1998). Trust can be divided into two types: competence trust and goodwill trust (Humphrey and Schmitz, 1998; Sako and Helper, 1998). Competence trust refers to transactions where the person or organisation is assumed to be capable of meeting the commitment, notwithstanding the risk and vulnerability. On the other hand, goodwill trust has an emotional acceptance of the moral commitment of the other not to

exploit vulnerability. It can be in the forms of honesty, respect or belief (Huxham and Vangen, 2000). Trust may be seen as depending on rational prediction of the economic and non-economic payoff to the participants in collaboration; however, such trust also depends on shared norms (Lane and Bachmann, 1998) and may, as noted above, entail an emotional act of faith.

In general, trust depends on the rational perception of a belief in others that resembles confidence (Pahl, 2000; Giddens, 1991), theoretically to be developed through frequent social exchanges. That means there might be an interrelation between trust and a network structure, which can be developed through experience and moral reputation. However, trust accepts vulnerability, assuming shared values and goals, and refers to reciprocity although the commitment is open and not formally conditional. More discussion on trust can be found in chapter 6.

Argument 3: Trust is an intermediate outcome of social interactions and varies with the network type and other socio-economic characteristics of the group.

This argument can be found in Chapter 6, which analyses how trust is linked to social interactions within the networks and the various socio-economic factors that influence the individual's cooperation.

2.2.3.4 Cooperation

Cooperation can be viewed as a tangible outcome of social capital. The individual's cooperation may vary, depending on their network structure. The collective cooperation is developed through the exchanges as the subject changes behaviour, informed by others' defection or cooperation, and later acts accordingly. Such experience forms a shared norm of general expectation from others in a group. Cooperation occurs under the possibility of continuation and the payoff from cooperation (Bo and Frechette, 2011).

An association between 'trust' and 'cooperation' is established in the literature of social science: (Fukuyama, 1996; Akerlof and Kranton, 2000; Brandenburger and Nalebuff, 1995; Bo and Frechette, 2011). Trust seems more abstract, a latent psychological phenomenon, a combination of feeling and judgement, one which is more or less positive. However, cooperation is more of a behavioural action, and is more tangible. Implicitly, engaging in cooperation involves a kind of give and take, and is an act of putting trust

into practice in a particular circumstance. Thus, both economic and non-economic cooperation is assumed to be facilitated or stimulated by implicit or explicit trust.

Again, a higher trust is expected within a group that shares similar socioeconomic characteristics, and less within a group which has diverse socioeconomic characteristics (Bouma et al., 2008). Thus, a higher degree of cooperation is expected among the poor than the non-poor. Carpenter et al. (2004) observed a high (economic) contribution among participants in a study on voluntary cooperation among Thai and Vietnamese poor in slums. However, they also argued that individual behaviour varies with social factors and depends on the role of culture in a group (see Carpenter et al., 2004).

However, individuals' psychological orientation towards social value differs, and this influences their cooperative behaviour (Kollock, 1998; Dawes and Messick, 2000). Cooperative behaviour may also be driven by goals and expectations, particularly within the context of interdependence, where trust may be one of many contextual moderators affecting cooperation (Bogaert et al., 2008).

Argument 4: Higher trust may have significant implications for higher cooperation in a group; however, that cooperation is contingent on other socio-economic factors.

This argument will be addressed in detail in Chapter 7, where individual cooperation is analysed in relation to other aspects of social capital.

2.2.3.5. Implications of social capital

Most of the literature on the concept of social capital refers to the value of the concept in terms of how it can be used to obtain resources. Mohan and Mohan (2002) believe that there is an interest in social capital because it is used to explain three areas of variance among countries: uneven development and economic growth, the comparative performance of governments and spatial variations in health. However, Mohan and Mohan note that there may be two distinct forms of social capital: that used by the economic elites, and the form associated with the interpersonal networks of neighbourhood life. In relation to spatial variations in health, Wilkinson (1996: referred to by Mohan and Mohan (2002)) claims that the highest health standards are found in the most egalitarian societies, not the richest ones. Here, social capital is viewed as the

mediating link between income and health (Kaplan et al., 1996: referred to by Mohan and Mohan 2002). So, social capital refers to the value of how it can be used to obtain resources. Manderson (2005) points out that it facilitates 'eudemonic wellbeing', which can be described as personal growth and development and positive interactions with others which build self-acceptance and personal capabilities (Kaplan et al., 1996; Mohan and Mohan, 2002). As mentioned by Currie and Stanley (2008), Putnam argues that where social capital exists, there is better neighbourhood functioning and wellbeing. On this ground we argue that social capital may have implications in relation to housing for the urban poor. The trust and cooperation of the poor may be useful for collective effort to resolve some of the housing market and non-market challenges that exist in Bangladesh.

Argument 5: Trust and cooperation may have potential implications for resolving some of the market and non-market barriers for affordable housing supplies for the urban poor in Bangladesh.

This argument suggests a possible theoretical model offering affordable housing for the urban poor in Bangladesh, which will be addressed in chapter 8.

2.2.4 Critical issues

2.2.4.1 Capacity to develop social capital and the use of it is different

Stone et al. (2003) point out an important distinction between measures of social networks and their outcomes. Much of social capital research has relied on its outcomes as the indicators of social capital itself. However, although a person has a range of networks in which they are involved, unless they use these networks to gain benefits, they are not gaining the outcomes of trust and cooperation. Social capital is a latent quality that subsumes in networks of relationships and beliefs about trust and mutual obligations. The capacity to generate social capital may reduce where it is not used. It seems that there is an important difference between the proposition 'use it or lose it' and the concept of a finite resource or reservoir of goodwill which can be used up. Social capital is non-rival to some extent; it may be viewed as the public goods. Such a notion provides a wider welfare economic perspective (Woolcock, 1998b). Second, there is a sense that just having social contacts is likely to have personal benefits in terms of reduction of personal isolation and the psychological advantages of membership of a group; together with gains

obtained from information exchange. This is the case even where social capital is not actively sought.

2.2.4.2 The spatial extent of social capital

Although social capital is measured at a national level, it may be focused on and extend over a much smaller socio-spatial context (Mohan and Mohan, 2002). An important Australian study was undertaken by Onyx and Bullen (2000) who surveyed five areas, with contrasting urban and rural environments. Rural areas showed higher levels of social capital in the form of participation in community activities and mutual support, but a lower tolerance of diversity (e.g. ethnic), partly owing to lack of exposure/experience and a more general social conservatism.

2.2.4.3 Social capital is not necessarily positive

Some scholars' perspectives assume that the positive aspects of social capital dominate or outweigh any negative aspects. Putnam assumes that all social capital is necessarily good (Winter, 2000). However, much of the literature points out that social capital can be both a positive and negative force (Portes, 2000; Fukuyama, 2001; Knack and Keefer, 1997a). Social capital is positive where it gives group members access to privilege, resources and psychological support, but may be negative where it places high demands on group members and restricts individual expression and liberty (Ports, 2000).

Bourdieu (1986) argues that social capital in elite or well-resourced circles may act as a closed system, excluding others from gaining their privileged access to similar social capital. In addition, some networks may not be of benefit to either the individual or society. Examples most often used relate to criminal networks: Internet networks of child sexual abusers are a major problem within society which has not, as yet, been even partly addressed (Stanley et al., 2012). Equally, an intimate group of drug dealers in a neighbourhood is assumed to be harmful to society. Some of the negativity may be attributed to the inwardness of close ties in poor communities (Forrest and Kearns, 2001; Atkinson and Kintrea, 2001).

2.2.4.4 The role of the state in the creation of social capital

Putnam's argument perhaps bypasses the ways in which social capital can be created and destroyed by structural forces and institutions (Mohan and Mohan, 2002). Indeed, there is little discussion about the role of the state in the creation of social capital, nor of the interrelationships among the various forms of capital, beyond noting that synergy is needed between accountable states and their societies (Woolcock, 1998b). Crow (2004) does note that governments are able to facilitate the growth of social capital by provision of a favourable environment for its development; for example, improved safety through crime reduction, better planning of housing developments or the provision of universal education .

However, as Mohan and Mohan (2002) remind us, much social organisation and development work in third-world countries has the tacit, if not explicit, understanding that it is the re-establishment of social capital and trust that is, and will be, the backbone of reconstruction and survival of the neighbourhoods. Mohan and Mohan refer to the work of Skocpol (1997) who believes that any change in social capital is not so much a result of individual change, but rather due to the changes in state policies. He refers particularly to the decline in local campaigning and a proliferation of nationally organised special interest groups, as well as new connections between elites.

Mohan and Mohan (2002) offer the argument that any neighbourhood development approach would be at risk if participation of the grassroots people fails. Indeed, such a neighbourhood development approach seems to create a contradiction, where there are tacit discourses about blaming disadvantaged people for their own consequences. This discourse advocates the reduction of the role and responsibility of the government in facilitating the wellbeing of the poor. Mohan and Mohan illustrate an outcome of this, noting that local participation allows maintenance of "continuity with most of its practices and prejudices which include benign neglect of macro-relations of power" (Mohan and Mohan, 2002: quote Fine 1999 p.12).

2.2.4.5 Others

Social capital literature, particularly the literature produced within the discipline of economics, has given an account of the notion of capital, and thus is concerned whether it carries any characteristics of 'capital' in the normal economic sense of the word. The question is whether social capital is useful for economic gain or the changing of

ownership of resources (Quibria, 2003). However, social capital may also be viewed an an asset which generates a stream of benefits over time.

There are some demerits too. Social capital may lead to the monopoly of business in societies, with elite social capital leading to monopolists colluding (Bourdieu, 1986). It implies that the potential of entrepreneurship will be hampered by underwriting the indolence and insolvency of those who fail, e.g. easy bankruptcy laws encourage entrepreneurship. In addition, strict social norms and customs may create suffocating situations for members that can hinder the dynamics of the individual's potential for economic development.

Measuring the implicit relationship between economic performance and trust is complex. Heterogeneous societies tend to have less social capital. Social capital (trust) facilitates business/trade by reducing transaction costs. Corruption implies too much of the wrong kind of social capital, acting as a dead weight on economic development. Some countries, which leverage access to credit, help reduce the transaction costs of screening, monitoring and enforcement, through such initiatives as mutual insurance, risk sharing, and help in collective action (Quibria, 2003).

2.2.5 Measures of social capital

A set of measures of various aspects of social capital may be found in some of the literature, which typically measure the concept by responses to specific items in a questionnaire. Those indicators are then rating scaled, with respondents grading how they feel in relation a particular situation (e.g. choosing one of the following ratings: very bad, bad, average, good or very good). Details of this approach can be viewed in the review of literature on social capital (Stanley et al., 2012; Acquaah et al., 2014; Akcomak, 2011).

2.2.5.1 Stone's measures

Stone (2001) has reviewed the approaches used to measure concepts of social capital. She notes a deficit in how the measures of social capital relate to the theoretical definition. This has led to questionable indicators of social capital and therefore to inconsistent results, as well as to confusion between measures, indicators and outcomes. Stone believes that there should be a distinction between measures of social capital and its

outcomes. Much social capital research has relied on its outcomes as indicators of social capital itself.

Stone has developed a framework for the measurement of social capital, which is based on the perspective that social capital consists of networks characterised by norms of trust and reciprocity. These social networks may be assumed to represent the manifestation of social capital. Strategic, or longer term, goals of research on social capital include impacts on the following issues: life expectancy; health status; suicide rates; teenage pregnancy; crime rates; participation rates in tertiary education; employment and unemployment rates; family income; marital relationship formations and dissolutions; business confidence; job growth; growth in GDP; and balance of trade (Stone, 2001: 5 reporting Spellerberg 1997, pp. 43-44). While strategic goals are not addressed in her framework, Stone notes that these outcomes should be empirically related to measures of the core components of social capital and the intermediate outcome of trust. Thus, as social capital is a multi-dimensional concept, the networks, and norms of trust and reciprocity need to be measured.

Networks

Stone sees networks as the structural elements of social capital, within which the norms of trust and reciprocity develop. Understanding about networks is often drawn from the contemporary use of social network analysis, such as the study by Bowling (1997) of networks and social support. The structure of networks or social relationships can be characterised as follows:

- Type: informal to formal
- Size/capacity: limited to extensive
  Social capital is not restricted to networks of any particular size. Size refers to the number of people maintaining social contact; this can include those who are only called on when needed.
- Spatial: household to global

The literature talks about social capital around the family, community, region and nation. Social capital may be spatial/neighbourhood-based, or it may be based on a 'community of interest' (e.g. people interested in cycling, walking, sailing), in which case propinquity

is less important. It involves not only mobility, but also communication, which is opened up by email and the internet.

- Structural: open to closed; dense to sparse (the extent to which network members are in each other's networks); homogenous to heterogeneous; similarities between members (age, socioeconomic status, etc.).
- Relational: vertical between citizens and people in authority, or horizontal

Other aspects which could be included are:

- Frequency of contact between members
- Strength of ties: degree of intimacy, reciprocity, expectation of durability and availability, emotional intensity
- Social participation: involvement in social, political, educational, church and other activities
- Social anchorage: years of residence and familiarity with neighbourhood, involvement in community

Stone offers a range of questions which have been used in interview surveys to measure each of these structural aspects of networks. In general the techniques used involve interview questions to explore the nature and scale of networks.

Norms of trust and reciprocity

Stone defines trust as "the expectation that arises within a community of regular, honest and cooperative behaviour, based on commonly shared norms, on the part of other members of that community" (Fukuyama, 1996: 26). Thus trust and reciprocity are closely related.

The means of measuring norms of trust and reciprocity are less well developed than are the measures of the structural characteristics of networks. Three broad types of trust are identified in the literature:

- Trust of familiars or particularised trust: this exists between established relationships and social networks.

- Generalised trust: this trust extended to strangers on the basis of expectations of behaviour or a sense of shared norms within a community, with the implicit sanction of exclusion from that community for those who abuse trust.
- Civic or institutional trust: this refers to the basic trust in institutions of governance, including fairness of rules, official procedures etc.

As with networks, Stone gives a range of questions which have been used in studies to measure trust. She notes the *ad hoc* approach to trust measurement, where measures of norms, attitudes and the outcomes of norms are not clearly delineated. In addition, the measurement of generalised trust often fails to specify a special dimension, such as, within a community, town or country.

As noted early in this report, reciprocity is viewed as the process of exchange within a social relationship, whereby goods and services (meaning exchange of any kind) given by one party are repaid to that party by the party who received the original goods and services. Expectations about reciprocity will vary between the types of networks, such as family and non-family networks. Norms about reciprocity vary, for example they may involve direct or indirect exchanges of favours for others; equally, they may involve the expectation of immediate or future exchanges.

Stone recommends adhering to the following aspects for the measurement of social capital:

(i) Identify the types of social networks, as well as the network characteristics said to influence social capital
(ii) Investigate norms of trust and reciprocity
(iii) Seek links between each of the above factors; in particular how network types relate to norms of trust.

2.2.5.2 Johnson's measures

Johnson et al. (2003) consider community, social networks and social capital as interchangeable terms. The researchers have established the following principles of measurement:

1. Distinguish between structure and content

- Structure: measures which are easily available and therefore commonly used and are reliable and valid:
  - measures of membership – social, occupational and political organisations
  - Measures of voluntary work
  - Measures of informal networks – family and neighbourhood linkages

These are considered along the lines of content, density and openness or closure.

- Content
  - Trust and reciprocity
  - Measures of friendship and intimacy
  - Measures of participation/activism

2. Specify the arena or area of activity to which measures apply:

- Political organisations
- Economic and occupational organisations
- Voluntary work
- Social organisations or informal neighbourhood and friendship networks
- Family networks

The authors note that trust is likely to vary according to which network is being considered.

3. Measures of community/networks/social capital can validly be presented at any level of aggregation.

4. The costs and benefits of social capital can always be assessed empirically and should not be assumed to be benign. Also, it cannot be assumed that more is better.

2.2.6 Other measurements of social capital

The measurements of social capital have been found to vary in the literature, depending on the purposes of the studies. Furstenberg and Hughes (1995) analysed family and neighbourhood level variables - such as the duration of schooling, membership of the church, frequency of contact with friends, belief that someone would help at critical moments, educational outcomes, school quality, and parents' participation in neighbourhood activities – to measure the subsequent social capital outcomes associated

with youth. To estimate social capital at individual and neighbourhood levels, Furstenberg and Hughes ran separate regressions on family human capital, and parameters were interpreted for the success of young people, suggesting that the parents' human capital helps the youth to negotiate their way out of disadvantage. Again, Narayan and Pritchett (1999) used an expenditure model to study the role of social capital in influencing household outcomes in rural Tanzania. Their estimation of social capital is constructed on the weighted average of responses about membership of various groups, the characteristics of those groups, and attitudes relating to trust. Membership and household characteristics are used as associational activities, and trust has been instrumented as an endogenous variable. However, both these methods of measuring social capital are criticised by others.

The other major problem involves the analysis of cause, manifestation and prediction of the outcomes of social capital. It is potentially problematic to characterise collective behaviour like trust and cooperation as an aggregation of individual social behaviour (Durlauf, 2002), because the relationships between individual and group characteristics are associated with, and reconstruct, each other. Moreover, various aspects of social capital (e.g. causes, manifestation, trust and cooperation) are not only the reflection of socio-economic factors, but also a reflection of the social norms and culture of social psychology (though socio-economic factors act to some extent to reinforce and shape norms and culture). Thus there is concern about 'endogeneity'. Estimation of behavioural outcomes of social capital, in relation to various explanatory variables (e.g. socio-economic variables, social networks) is an issue. The inferences from theoretical exploration of game theory[1] might be drawn to predict possible patterns of relationship, i.e. factors associated with trust and cooperation. In this process, the implication of cooperative, repeated game theory may help understand optimal social behaviour at an individual level (Gibbsons, 1992). Given such theoretical assumptions, the outcomes of social capital involve an interactive decision-making process under uncertainty; therefore, this is an issue like those examined in game theory (Akerlof and Kranton, 2000; ; Bo and

[1] Game theory is the science of interactive decision making, used largely in behavioural economics. This strategy attempts to determine the actions that agents should take to secure the best outcomes for themselves in a wide array of games, mathematically and logically. That is, the outcome for each participant depends on the choices (strategies) of others. In the early years the emphasis was on games of pure conflict (zero-sum games). Other games were considered in a cooperative form. That is, the agents were supposed to choose and implement their actions jointly. Recent research has focused on games that are neither zero sum nor purely cooperative; instead, the agents choose their actions separately, but link to others elements of both competition and cooperation.

Frechette, 2011). However, such an approach requires advanced studies to assess collective social behavior. The major problem involves the analysis and prediction of collective behaviour as an aggregation of, or derivation from, individual-level data (Durlauf, 2002). Game theory also tends to rely on rational maximising behaviour, yet confronts many indeterminate situations. Thus it is likely that other factors – cultural, emotional, etc. as well as shortcut heuristics – will play a strong part in actual behaviour. Sociologists tend to be critical of the over-individualistic/hyperrational approach of economists.

The implications of game theory are not common in the literature on measuring social capital. However, game theory is commonly used in the study of trust and cooperation, which are assumed outcomes of social capital. Critics have put forward their concern about the fuzzy definition of social capital (Quibria, 2003; Durlauf, 2002; Ports, 2000). It could be argued that game theory is partially useful in exploring the outcomes of social capital, on the grounds that rational psychological behaviour may be facilitated by trust and cooperation.

An estimation of relationships between variables representing different aspects of social capital requires careful analysis in order to make valid inferences concerning the underlying relationships. The method of estimation, based on the instrumental variables technique (as discussed further in Chapter 7), often suffers from econometric problems.

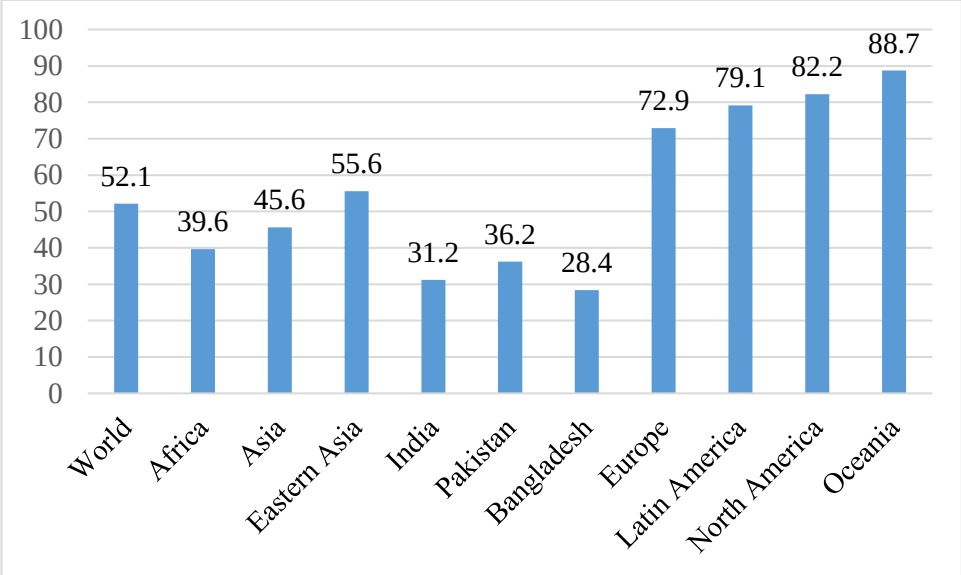
2.3 Review of urban poverty and housing

In this section we review the literature and data on urban poverty and housing, targeting mainly on Bangladesh, but also making some comparisons with the South Asian countries. There is a dearth of literature on urban poverty in Bangladesh, though a handful of literature is available on rural poverty. The literature on housing markets in Bangladesh is really scant. We illustrate this section with the help of tables, charts and diagrams based on data from the Bangladesh Bureau of Statistics (BBS), the World Bank and the UN.

2.3.1 Urbanisation

Urbanisation in Bangladesh has accelerated; the annual rate of increase of the urban population was 2.4% during the period 2010—2015; this is higher than in other South

Asian countries (Islam et al., 2007; Hossain, 2008). Urban population growth is 1.1% in India and Pakistan and 2.0% in Vietnam (UN, 2014). Bangladesh's growth is almost equal to the pace of urbanisation in China and Thailand. Such acceleration is primarily attributed to: (a) the persistent economic growth of the country (as discussed in a later section); and (b) a large proportion of the people still living in rural poor areas (see Figure 2.2 below). Compared with 31.2 % and 36.2% in India and Pakistan respectively, Bangladesh's urban population is 28.4%. Migration to cities is expected to be further accelerated by the situation facing rural people (Rana, 2011; Dewan et al., 2012).



Source: UN (2014)

Figure 2.2: Share of the urban population by country/region in 2014(%)

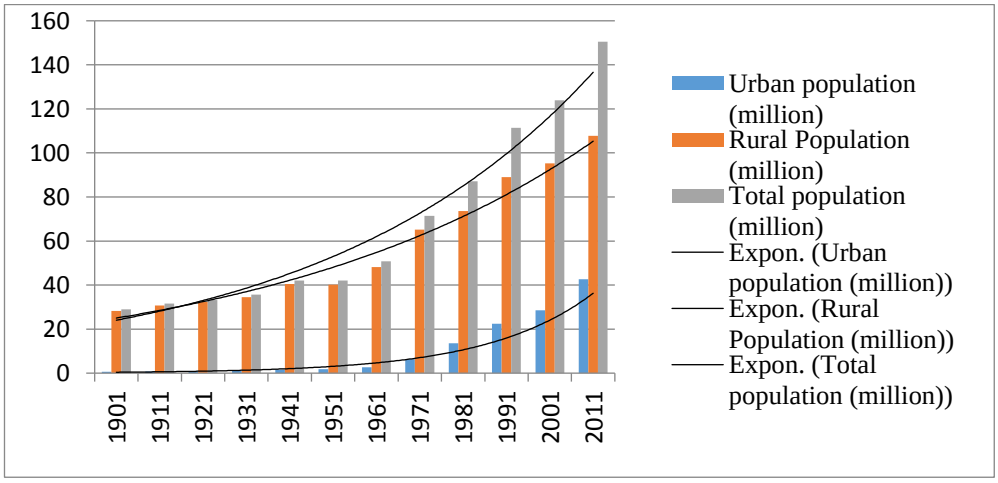
In a densely populated country with one of the lowest GDPs in South Asia (see Table 2.1 below), such urbanisation is accompanied by lack of basic infrastructure and services (Islam et al., 2013). Economic migrants to cities are most affected by these circumstances. The new migrants are mostly unskilled, which means they have little or no opportunity in the formal job market (see Appendix E). The informal job market pays lower wages to unskilled labourers than they need to maintain a standard living in cities (Sharit, 2005). Arguably, the government's public policy is yet to fully appreciate the significance of the urban influx, exacerbating urban poverty (Banks et al., 2011b; Hossain, 2010).

Table 2.1: Population and growth rates in South Asia

Country	Population (millions) 2013	Density (per sq. km.) 2013	Urban population (% of total) 2013	GNP (based on PPP) ($)	
				(billions) 2013	(per capital) 2013
Bangladesh	156.6	1203	33	498.8	3,190
India	1252.1	420	32	6700.1	5,350
Pakistan	182.1	236	38	881.4	4,840
Sri Lanka	20.5	327	18	194.1	9,470

Source: WB (2015)

Along with economic factors, multiple other factors contribute to the growth of urban populations, including natural factors such as river erosion and flooding (Shachi, 2015; McPherson, 2015). Since formal and informal job markets are largely concentrated in cities, most of those affected migrate there, particularly to Dhaka. This phenomenon is found to some extent across the world, where economic opportunities are centralised (Chen and Rosenthal, 2008; Iversen et al., 2009). So the population growth rate in cities is faster compared with the growth in rural areas (see Figure 2.3 below). If these trends continue, the urban population of Bangladesh is expected to be half of the total population of the country by the end of 2040 (Banks et al., 2011a).



Source: BBS (2011b)

Figure 2.3: Trend of population growth of Bangladesh

With economic growth of a country comes the need for adequate infrastructures and services to cope with the situation. The influx of landless poor to cities creates the need for affordable housing and other basic urban services (Begum, 2007b). In the absence of such housing services, the urban poor are living in substandard informal housing, typically with no security of tenure, and major cities are overcrowded with poor people living in slums (see Table 2.2 below). In the absence of security of tenure, especially on public land, they are often forcefully evicted by government agencies or by the *de facto* owners who control such public land (Rahman, 2001). Sometimes, slums are burnt to reclaim control of the public land for new legitimate or illegitimate development (Rashid, 2009a). All of this would aggravate the living conditions of the poor.

Table 2.2: Slum settlements in major cities in Bangladesh

City	Dhaka	Chittagong	Khulna	Rajshahi	Barisal	Sylhet
City population (estimate)	9,136,182	4,133,014	966,837	489,514	365,059	356,440
Number of slum population	3,420,521	1,465,028	188,442	156,793	109,705	97,676
Slum population (% of total population)	37.4	35.4	19.5	32	30.1	27.4
Number of slums	4,966	1,814	520	641	351	756
Slum population density (per sq.km)	220,246	255,100	132,988	67,236	133,730	154,741
Non-slum density (per sq km)	19,677	15,543	16,884	6,796	5,084	9,630

Source: (Hossain, 2014)

Socioeconomic vulnerabilities experienced by the urban poor originate from a number of sources, which, it may be argued, require to be addressed by public policies. Understandably, the economic vulnerability of the urban poor is the primary source of most, if not all, other vulnerabilities. Uncertainty of regular and adequate income is pushing the poor into, or keeping them in, slum neighbourhoods, which leads to other vulnerabilities, stemming from inadequacy of social opportunities and discriminatory social attitudes (Hossain, 2005; Lloyd-Jones and Rakodi, 2014), as well as public health hazards, poor infrastructure and difficulties of daily living.

2.3.2 Poverty and inequality in Bangladesh

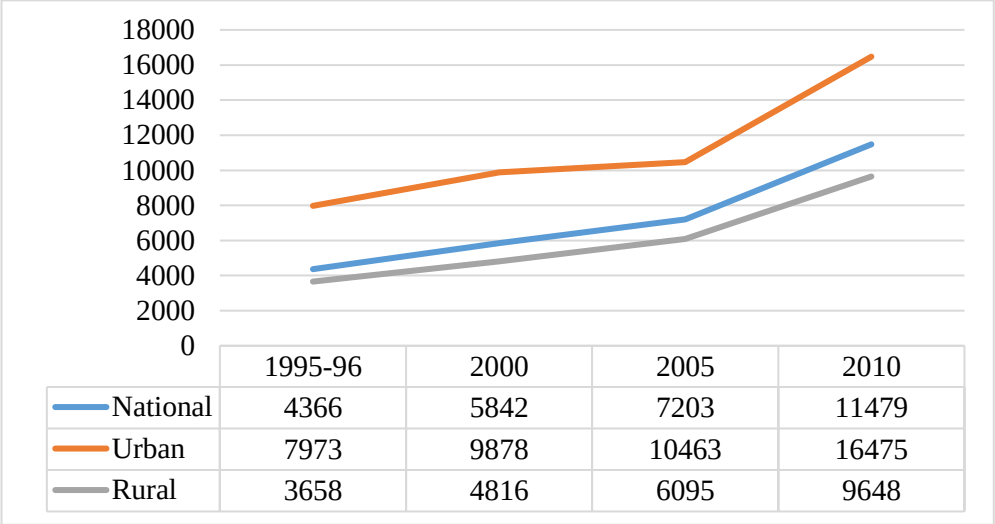
Bangladesh's GDP is around $500 billion, which is less than one-tenth of India's GDP. However, the country's GDP has consistently grown over the last couple of decades (see Table 2.3 below). Compared with 4.8% annual growth in the 1990s, it has grown to a rate of 5.9% in the 2000s. The recent growth is even faster, at over 6% annually. Such growth is comparable with the average growth of South Asian countries, but it still lies behind that of Indian and Sri Lanka.

Table 2.3: GDP Growth in South Asian countries 1990—2013

Country	Average annual % growth		
	1990-2000	2000-2009	2009-2013
Bangladesh	4.8	5.9	6.2
India	6.0	7.6	6.9
Pakistan	3.8	5.1	3.1
Sri Lanka	5.3	5.5	7.4

Source: WB (2015)

Household income has increased from BDT 5,842 (approx. £590) in 2000 to BDT 11,479 (approx. £1150) in 2010. Over this period, such increases have simultaneously happened in both urban and rural areas. However, the annual percentage increase of household income is higher for rural households than for urban households. In the period between 2000 and 2010, the average annual increase of rural household income was 10%, compared to a 6.7% annual increase in the incomes of urban households (see Figure 2.3 below).

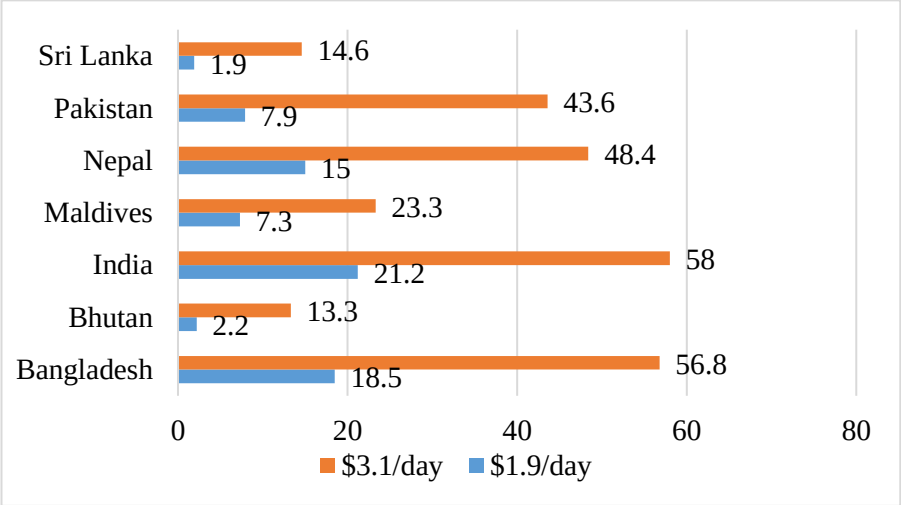


	1995-96	2000	2005	2010
National	4366	5842	7203	11479
Urban	7973	9878	10463	16475
Rural	3658	4816	6095	9648

Source:(BBS, 2010c)

Figure 2.3: Trend of household income over the period by urban/rural area

Yet a significant proportion of the population (17.6% by lower poverty line and 31.5% by upper poverty line in 2010) lives below the poverty lines (BBS, 2010a). The proportion is even higher according to the World Bank's estimates. Bangladesh has one of the highest poverty levels in South Asia (see Figure 2.4 below). Compared to 1.9% in Sri Lanka and 7.9% in Pakistan, 18.5% of people in Bangladesh live below the lower poverty line (WB, 2015). The percentage of people in Bangladesh living below the upper poverty line is also high compared to other South Asian countries.



Source: World Bank (web database)

Figure 2.4: Poverty head count ration (PPP) (% of population), 2010

The above discussion might imply that, though household income has increased and poverty has reduced significantly over the period, the reduction in poverty has been disproportionately low compared to the country's economic advancement. Such a scenario is blamed on the unequal distribution of income and wealth (Sobhan, 2010). Thus poverty remains a major public policy concern in Bangladesh. In the following section, we discuss the income distribution and its historical trend.

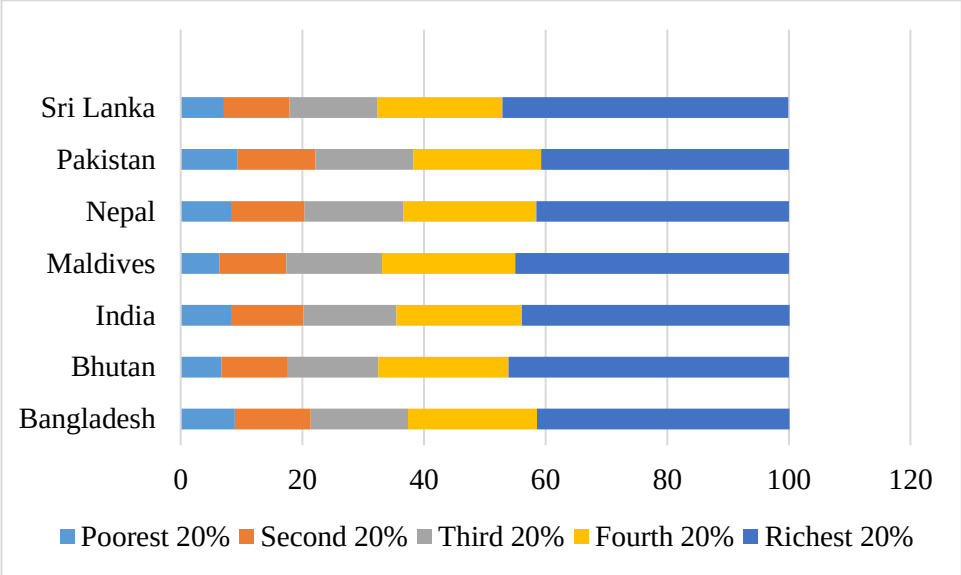
2.3.2.1 Income share of households

The income share accruing to different household quintiles is presented below (Table 2.4 below). Over the period, income share has declined in the 1st, 2nd, 3rd and 4th quintiles. In contrast, the income share in the top quintile has continuously increased during the period between 1983 and 2010. This means that not only the poor, but also the middle class suffered losses from the distribution of income. The income share of households in the bottom quintile decreased by two percentage points during the same period, with an annual average decline of .71%. Annual rates of decline in the 2nd, 3rd and 4th quintiles are .54%, .32% and .27%, respectively. This implies that the poorer households are, the more they suffer in terms of share in income.

Table 2.4: National income share (1973-2010)

Year	Quintile				
	1st(bottom)	2nd	3rd	4th	5th
1973-74	7.0	11.3	15.1	22.8	44.4
1981-82	6.6	10.7	15.2	22.1	45.3
1983-84	7.2	11.8	15.9	21.7	43.4
1985-86	7.0	11.2	15.1	20.7	46.0
1988-89	6.6	10.9	15.1	21.2	46.2
1991-92	6.5	10.9	15.5	22.2	45.0
1995-96	5.7	9.8	13.9	20.5	50.1
2000	6.3	9.7	13.2	18.8	52.0
2005	5.3	9.1	13.1	19.8	52.7
2010	5.2	9.1	13.3	20.6	51.8
Annual	-0.71	-0.54	-0.32	-0.27	0.46

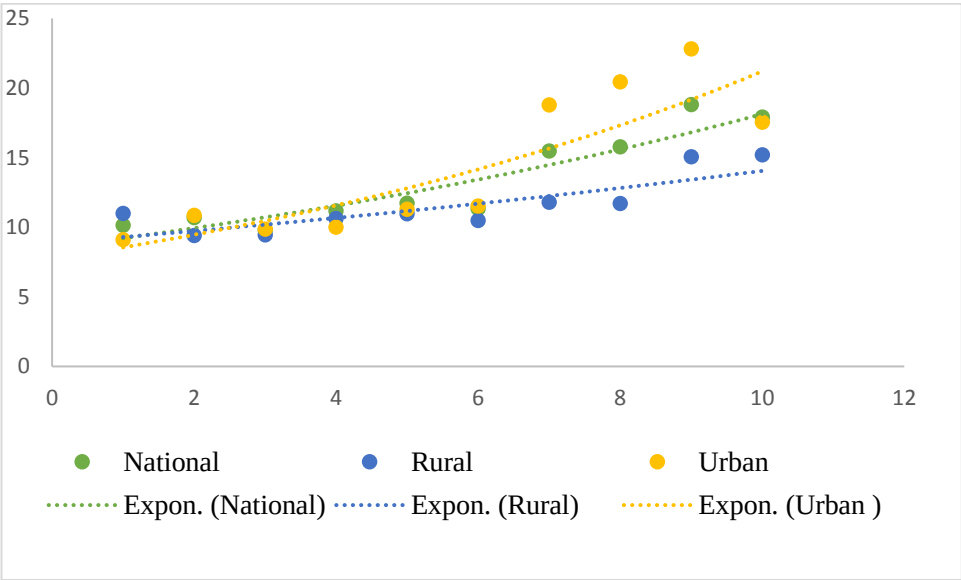
Source: Matin (2014)



Source: Worlds Bank (web database)

Figure 2.4: Distribution of income by quintile in South Asia

This situation is perhaps common in all South Asian countries where the lowest four quintiles hold less than 60% of the total income (see Figure 2.4 above). Clearly, the declines of income shares of the lower quintiles are attributed to the share gained by the 5th quintile. During the period between 1983 and 2010, the gain of income share by the richest quintile is 8.4 percentage points, with an annual rate of increase of 0.31%.



Source: (Matin, 2014)

Figure 2.5: Ratio of income share (top 10% / bottom 10%)

The upward trends of the ratio of income shares between the top 10% and bottom 10% are displayed in Figure 2.5 above. The trend of the ratios is steeper in urban areas than the national trend, which means that income inequality is growing faster in urban areas than in rural ones (Matin, 2014).

Income inequality in Bangladesh has continued to grow since its independence in 1971, and particularly since 1983. During the period between 1973-74 and 2010, national inequality increased from .36 to .46, with an average increase of 0.77% per year (see Table below). No significant difference in overall inequality is observed between rural and urban areas during the period. The Gini coefficient increased from .35 to .43 in rural areas, while it increased from 0.38 to 0.45 in urban areas, though a downward trend of Gini values is evident in urban areas between 2000 and 2010.

Table 2.5: Gini index (household income)

Year	National	Rural	Urban
1973-74	0.36	0.35	0.38
1981-82	0.39	0.36	0.41
1983-84	0.36	0.35	0.37
1985-86	0.38	0.36	0.37
1988-89	0.38	0.37	0.38
1991-92	0.39	0.36	0.4
1995-96	0.43	0.38	0.44
2000	0.45	0.39	0.5
2005	0.47	0.43	0.5
2010	0.46	0.43	0.45

Source: Matin (2014)

However, the values of Gini concentration ratio is higher in urban aresa compared to their corresponding values of rural areas in all the corresponding years, suggesting the prevalence of higher income inequality in urban areas (Matin, 2014). By and large, the overall trend of income inequality in Bangladesh is upward. Such income inequality leads

to different levels of access to social opportunities. In the absence of equal social opportunities, the acquisition of human and physical capital is challenged by the low incomes of the urban poor, who are mostly engaged in the informal labour market (Lloyd-Jones and Rakodi, 2014; Azam and Imai, 2009). Physical labour in the informal sector provides few opportunities to earn money even for daily subsistence, resulting in sustained poverty and inevitable ill health. Lack of human and physical capital forces the poor to rely on physical labour, and so they suffer when the income earner of the household gets sick. (Hossain, 2011b).

In the absence of necessary social opportunities, the poorest quintiles in urban areas are more vulnerable and follow different strategies to tackle their livelihood challenges. They also lack assets that could be converted into cash during an emergency (Hossain, 2005). Their assets commonly include a cheap bed to sleep in, a table, cloths, a TV, a mobile phone and, more rarely, some gold ornaments. Low incomes and poor assets do not offer sufficient economic power to live beyond poverty and social vulnerability in the slums (Ahmed, 2015).

2.3.3 Housing poverty

The National Housing Policy, first prepared back in 1993, can be viewed as a major landmark in the field of housing. However, the effectiveness of the housing policy is insignificant, and it largely failed to ensure affordable housing to the large majority. In contrast, the evictions that took place in Dhaka between 1999 and 2001 affected hundreds of thousands of the poor (Hossain, 2010; Islam et al., 2007).Without particular attention to the issue of unaffordability inflicted from various sources, there is little hope that the housing problem in Bangladesh, particularly of those living in slums, will be solved in the near future. There are some isolated initiatives to accommodate the poor, but those are located in rural settings (GoB, 2011; Rahman, 2012).

One of the policy principles was effectively to involve the private sector and NGOs in the improvement of slums (Rahman, 2012; Rahman, 2010). This was expected to achieve some success in dealing with the problem of affordable housing to the poor. But due to large-scale finance requirements and risks associated with investment in such development, the involvement of the private sector was almost nil, and the involvement of NGOs was limited to raising awareness of housing rights. The Coalition of the Urban Poor (CUP) is one such NGO, working to protect the urban poor from potential eviction.

The only public/private partnership, the *Vashatek* housing project, aimed to build 9,024 flats; 60% of these were intended to accommodate 9,000 urban poor, but they failed to reach those targeted because of political administrative interference and corruption in distribution (Khan, 2012c).

Some changes were made to the subsequent Housing Policies in 2004 and 2012, which paid particular attention to the housing issues of the urban poor (Rashid, 2009b). However, according to this source, those policies still have no significant effect on the housing conditions of the urban poor. The key policies include:

(i) Accommodation for the urban poor through the building of multi-storied and low-cost housing
(ii) Sites and service schemes for low- and middle-income people
(iii) Developing condominiums for low- and middle-income people
(iv) Multi-storied flats to accommodate government employees
(v) Housing for working women
(vi) Low-cost housing in coastal areas
(vii) Private sector involvement through necessary incentives and subsidies from the public sector
(viii) Private and NGO involvement in 'slum improvement'

The seventh five-year plan (2016-2020) has introduced some policy changes that are expected to improve the housing sector in Bangladesh. The policy includes improving residential infrastructures: housing, water, sanitation and the environment. Also, a strong multidisciplinary urban planning system is proposed for planning, implementation and management, so that well-coordinated housing planning and urban management can be achieved (Rahman, 2012).

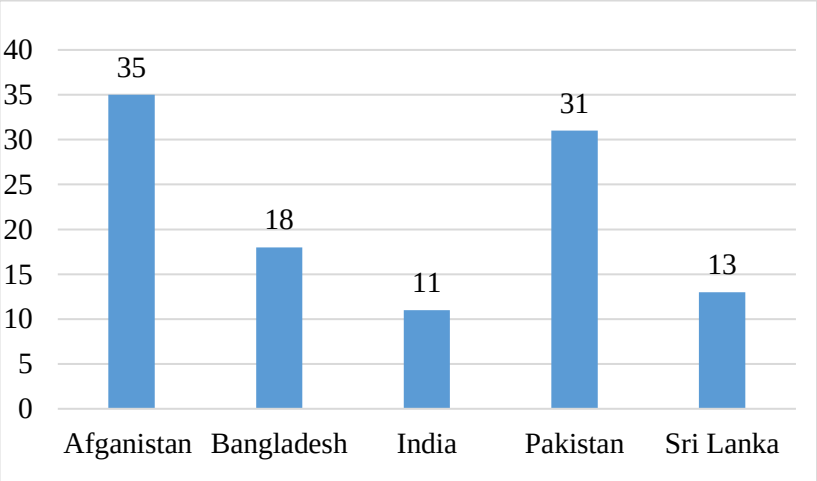
2.3.3.1 Housing market condition

The National Housing Policy proposed to improve the housing market, but in practice it has achieved little. Therefore, housing supply in the market is very limited, resulting a huge shortage (5 million housing units) in the country. The situation in urban areas is

aggravated by increased housing needs each year. With existing housing needs, the housing market of Bangladesh faces a number of challenges[2].

(a) Housing shortage

The large housing deficit is obviously a problem in all cities in Bangladesh, particularly in Dhaka. The estimated deficit in urban areas grew from 1.13 million units in 2001 to 4.6 million units in 2010, and is estimated to be 8.5 million units in 2021 (GoB, 2015). The estimated annual housing demand is between 300,000 and 500,000. The housing demands of the lower- and lower-middle-income groups remain unmet, despite a great demand for low cost housing (BDT 600,000—100,000) (HBFI, 2014). Market response to affordable housing demand is almost zero; this is primarily attributed to high land prices in cities, particularly in Dhaka. Land is comparatively cheaper on the outskirts, but due to the poor transport system, this land has little practical value in responding to affordable housing demand. This situation exists to a greater or lesser extent across South Asian countries; however, Bangladesh's shortage is 7% percentage points higher than that of India (see Figure 2.6).



Source: WB (2009)

Figure 2.6: Housing shortage in South Asia (share of total population)

[2]There is a dearth of research on the housing market in Bangladesh; therefore the following analysis relies primarily on the World Bank's housing market research on South Asia, referred to in Nenova T. (2010) *Exanding Housing Finance to the underserved in South Asia: Market Review and Forward Agenda,* Washington World Bank .

There are more than 800 real estate developers in the country; however, they deal in luxury apartments (1000—15,000 sq. feet) to cater to the upper-income group. This formal housing market is relatively competitive, but accounts for only 3% of all housing being built in the country and is concentrated in Dhaka. Formal housing purchases are made for investment and rental purposes, and most formal housing units are built by private land owners. The low-cost housing demand is met by informal housing being constructed outside regulatory frameworks, either on private land or on the land where occupiers have no formal title; this accounts for one third of all housing built in the country (Nevona, 2009).

(b) Limited housing supply

Only 23% of urban housing is permanent, made of a variety of materials ranging from brick masonry and reinforced concrete pillars to tin roofs and tin walls. Approximately 3.3 million housing units are made of temporary materials which require replacement every 1—5 years after construction. The condition of the slums or squatters' housing is miserable; the materials used for building houses are very cheap and fragile and easily destroyed. The common housing materials are bamboo, mud, polythene and corrugated iron sheet; such housing provides little security from theft or adverse calamities like torrential rain and flooding. Those housed in such slums lack proper urban services, such as electricity, water, and sewerage. (Hossain, 2011b).

Higher- and middle-income groups are housed in low-level buildings or multi-storeyed apartment buildings. The low-income groups (70% of total households) are housed in variety of houses. Half of them live in slums; some are private, others are built on public land illegally occupied by local power brokers. Conventional tenement slums contribute another quarter of low-cost houses. Other low-cost houses include government-provided squats, plots with basic services (given on a leasehold basis), employee housing, makeshift houses and pavement dwellings.

The formal housing development process in Bangladesh is slow and costly due to poor master planning and a shortage of planning professionals in the public sector, as well as inadequacies of infrastructure, land acquisition, development, construction and mortgage financing. High land value is another important challenge to affordable housing supply. Residential land value in Dhaka is roughly $60 per square foot, which is significantly

higher than in any other city. However, this varies depending on location (a separate discussion of the trend of land and housing prices in Dhaka follows). The land price in Chittagong is 15% less than in Dhaka, and 30-40% less in other cities.

Residential land in Dhaka is supplied by RAJUK (the capital development authority). There are similar authorities for each of the divisional cities, but they are merely functional. RAJUK regulates city development, plays a role in planning, supplies land for housing having providing residential infrastructures, and carries out residential construction in its own right. Each of these could facilitate the private development and supply of housing, but in the way it actually functions, it constrains the supply of housing by private developers. It supplies land at an artificially low price, which distorts the market.

The private development process is inefficient. Permits are required from at least eight different agencies, each of which involves delay, lack of transparency and governance problems. Additional delay is caused by inadequacies of legal and financial frameworks.

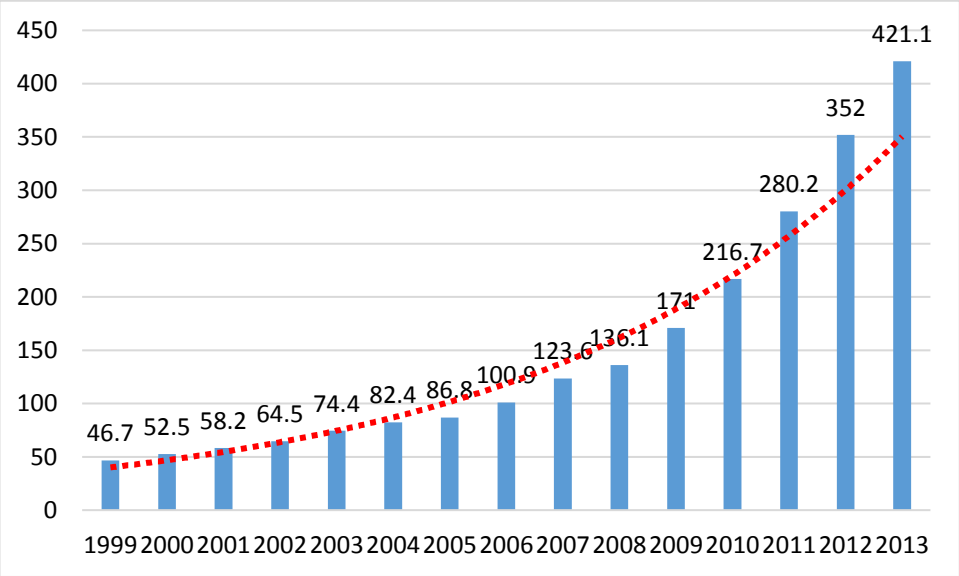
The underlying risks involved in housing development limit the developers' financing. Usually, housing loan-to-value is 50%, compared to closer to 100% in most other countries (Nenova, 2010). Moreover, the interest rate is as high as 16%, which is much higher than the interbank rate. So the development is mostly financed by private equity from the developers or from the buyers. This financial market condition delays the supply of housing.

Bangladesh has a very limited secondary property market. The flawed land development process and speculative attitude to property prices are the primary reasons for this. There is a shortage of real estate brokers and appraisers, and poor information on market prices and valuation. The transfer tax rate is as high as 12.5%. There is no House Price Index in Bangladesh; India is the only country in south Asia with such an index, having introduced it in 2007 (Nenova, 2010).

(c) Limited housing finance

Three specialised housing finance institutions, the state-owned BHBFC, Delta-BRAC Housing (DBH) and National Housing Finance (NHF), have been established. They play a role in housing finance, along with the state-owned commercial banks (SCBs), private commercial banks (PCBs) and foreign commercial banks (FCBs). MFIs have also made

some contributions to housing finance. From the fiscal year 2005-06 to the fiscal year 2013-14, the total outstanding housing finance increased from BDT 100,800 (£988) million to BDT 455,440 (£4,465) million. In 2013-14, the contribution of the specialised institutions, SCBs, PCBs and FCBs was BDT 60,900 (£597) million, BDT 100,100 (£981) million, BDT 235,600 (£2,310) million and BDT 31,100 (£305) million respectively; whereas the total outstanding housing loans of MFIs amounted to about BDT 27,740 (£272) million. The growth of housing finance is satisfactory, particularly the growth of housing finance from PCBs (see Figure below). However, current housing investment relative to capital demand remains low (BB, 2001-02 to 2013-14a; Kamal and Kamruzzaman, 2015).

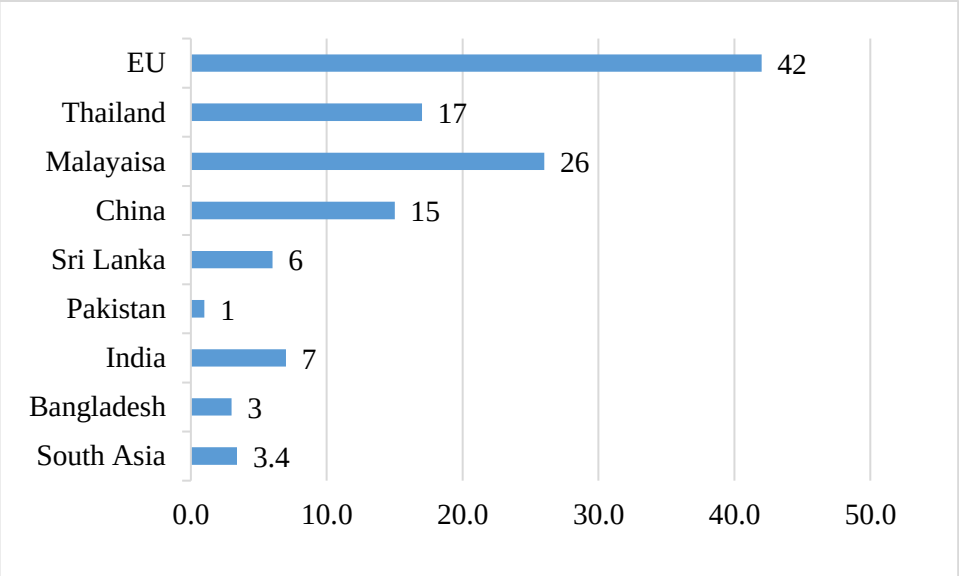


Source: Bangladesh Bank (2001-02 to 2013-14b)

Figure 2.7: Outstanding loans (BDT in billion) of specialised housing finance institutions, PCBs, SCBs, FCBs, Non-bank Financial Institutions and MFIs

The terms and conditions for mortgage finance in Bangladesh are expensive and complex. The average mortgage amount for housing finance varies between $36,000 and $43,600. The loan-to-cost is restrictive at a highest limit of 70%, but in practice it is 50%. The interest rates also vary between 14% and 15% with a maturity of period between 10 and 15 years. Such terms and conditions vary little in other South Asian countries. The average mortgage in India is $30,000 which is capped at 85%, and the interest rate is 12% over 13 years of the maturity period. The corresponding figures are $21,000-$44,000, 15-

17% and 12.5 years in Pakistan; and $10,000-$40,000, 15-17% and 15-25 years in Sri Lanka (Nenova, 2010). However, the ratio of housing debt to GDP is very low compared with many developing countries (see Figure 2.8 below).



Source: Nenova (2010)

Figure 2.8: Ratio of housing debt to GDP

2.3.3.2 The housing market in Dhaka

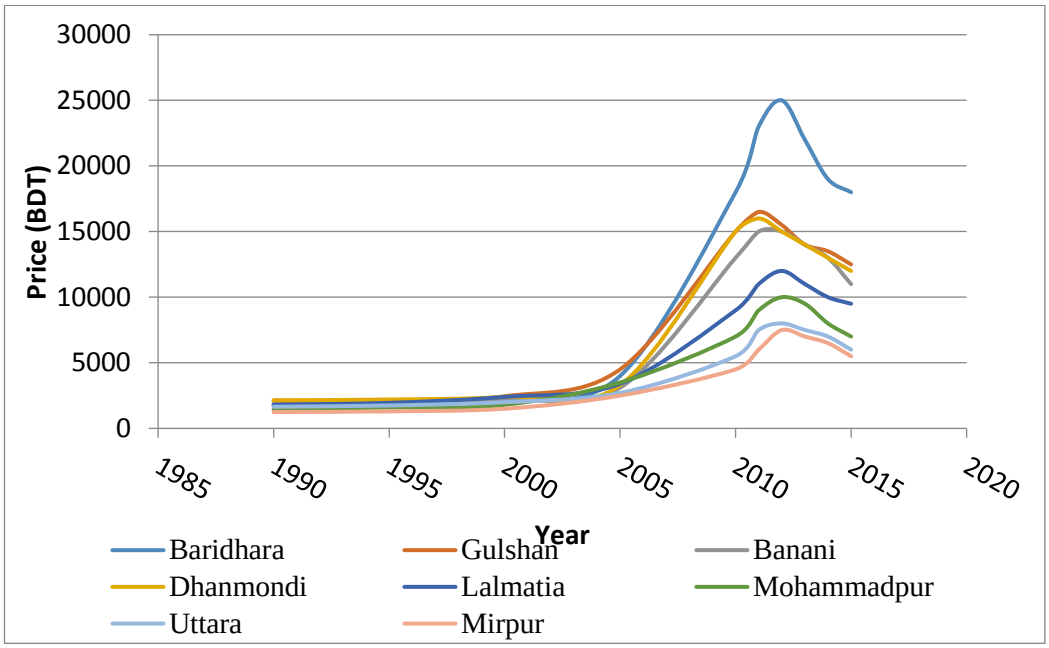
This analysis relies on the data of Sheltech, one of the major real estate developers in Bangladesh, presented at a REHAB (association of real estate developers) seminar (Seraj, 2014). Nominal prices per square foot of eight residential neighbourhoods at prime locations[3] across the city are presented in Figure 2.10 below. The lines show the trends of prices over the past 25 years. Figure 2.11 represents the trends of land values per 720 square feet.

The average prices of housing sold at different locations increased little between 1990 and 2005. However, prices increased sharply, by 2-6 times, thereafter, and this continued until 2012. House prices in Baridhara increased by more than six times between 2005 and

[3]'Prime location' means that the presence of real-estate developers is evident, presumably because of better locational attributes (i.e. well connected with the major part of Dhaka, services are available, etc.) relative to other locations. All of these attributes lead to a higher preference for those locations in Dhaka where the roads are generally congested because of higher population, services are distributed disproportionally, and so on.

2012, compared to only a twofold increase (from BDT 1,850 to 4,000) between 1990 and 2005. After 2012, house prices started falling, and this continues to the present. There was an obvious bubble, inflated by the speculative housing price and followed by the market correction thereafter. There was also political instability in 2012, which might also have influenced the falling market price (Kamal and Kamruzzaman, 2015). Yet current prices remain much higher than those of 2005; the market price of per unit housing in Baridhara was BDT 18,000 in 2015, which is 4.5 times the price of 2005. The house price in Mirpur (a relatively little-preferred location among the eight) increased by double, from BDT 1,250 in 1990 to 2,500 in 2005 and then to 7,500 in 2012; however, in 2015 the price decreased to BDT 5,500, which is still higher than it was in 2005. Housing prices in Uttara and Mohammadpur remain almost the same at all times; however, the price in Uttara started falling in 2014.

Per unit housing prices in Baridhara and Dhanmondi (comparable locations) were BDT 4,000 and 4,500 in 2005. But the prices variations between neighbourhoods and among different locations started widening after 2005. Exceptionally, the price in Baridhara increased from BDT 4,000 to 25,000 in 2012, exceeding that of its rival Dhanmondi. That price remains on top of the list of Dhaka's housing market, followed by Gulshan, Banani and Dhanmondi where the prices varied between BDT 15,000 and 15,500. Other neighbourhoods offered comparatively cheaper housing, ranging between BDT 7,500 and 8,000 in Uttara and Mirpurand and BDT 10,000—12,000 in Lalmatia and Mohammadpur.



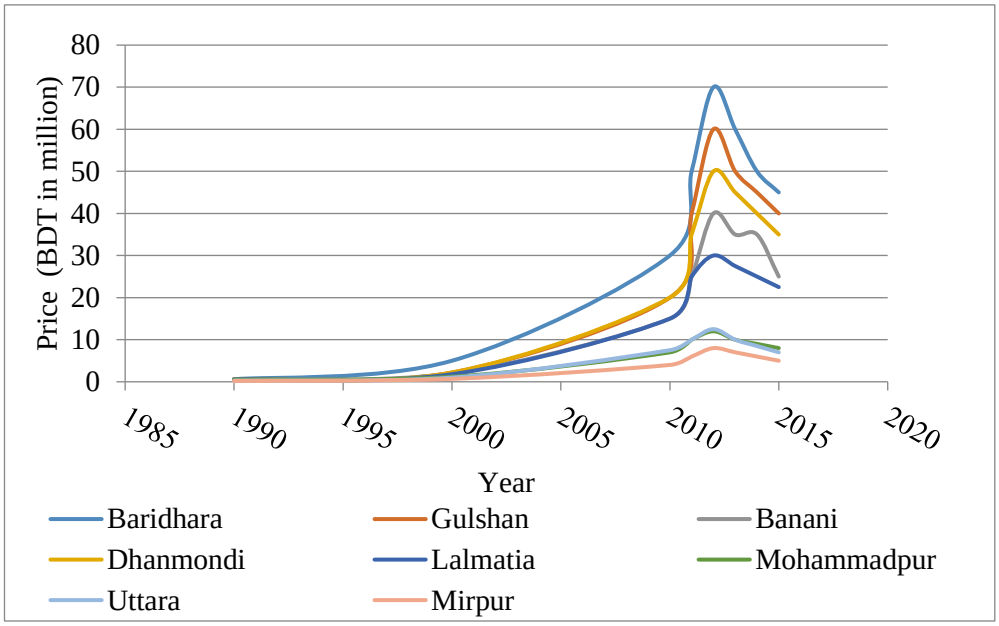
Source: Sheltech's presentation, *The Prospect of Real Estate Sector in Bangladesh*, at the REHAB seminar Seraj (2014)

Figure 2.9: The trend of house price at 8 prime locations in Dhaka

With the exception of Mirpur, all are planned neighbourhoods where RAJUK (the capital development authority) supplied land through 'site and services' schemes. Those planned neighbourhoods have failed to offer cheaper housing. But Mirpur has offered cheaper housing, which suggests that neighbourhoods that develop spontaneously are more affordable. Generally in these areas, installation of residential infrastructures and services is made on demand once housing is developed. Planning controls and regulations such as building height and setback compliance are still enforced, but infrastructures and service conditions are poor, with irregular street patterns, no public space and insufficient sunlight.

Land values started to increase in 2000. In 1990, the land value in Baridhara, Gulshan, Banani, Dhanmondi and Lalmatia was BDT 0.6 million per 720 sq. feet. It was 0.5 million, 0.3 million and 0.2 million, respectively in Mohammadpur, Uttara and Mirpur. In 2000, the land value in Baridhara increased from 0.5 million to 5 million, which is more than eight times than in 1990. It was also increased in other locations. Between 1.8 and 2.2 million per unit land was sold in Gulshan, Banani, Dhanmondi and Lalmatia, 1.2 million in Mohammadpur, 1 million in Uttara and 0.7 million in Mirpur. Land values in the planned neighbourhoods increased substantially in the later period. In 2012, per unit

land in Baridhara, Gulshan, Banani and Dhanmondi was sold at 70 million, 60 million, 40 million and 50 million respectively. The trend in house prices could suggests that the change in land values may be driven by the change in house prices – since the construction element of cost is less volatile, the 'residual' land value is more volatile.



Source: Sheltech's presentation, *The Prospect of Real Estate Sector in Bangladesh*, at the REHAB seminar (Seraj, 2014)

Figure 2.10: The trend of land value at respective locations in Dhaka

The estimated annual average increase of house price is 19%. However, the highest increase is 35% in Baridhara, 17%—21% in Gulshan, Banani, Dhanmondi and Lalmatia, and 11%—15% in Mohammadpur, Uttara and Mirpur. 6—8% inflation could be one reason for such increase; however, a large part of the problem is attributed to the speculative land prices driven by the house price bubble of 1990—2010 (Das, 2014). It may be that the price boom between 2005 and 2012 was driven by international events and financial flows, especially by investment by richer people, than by real/demographic demands – which have been steadily increasing for decades.

As well as land value, the incremental prices of construction materials have also contributed to housing price increase. The annual price is increased by 30% on brick, 17.5% on coarse sand, 9.5% on cement, and 15% on steel-rod, over the last 25 years. The

price of construction materials has increased sharply, particularly the price of brick. However, unlike land prices (which shot up until 2012 and fell thereafter), the prices of the construction materials has increased consistently since 1990.

The average apartment size produced in in the market was substantially high for the middle class, at approximately 1300 sq. feet (Chowdhury, 2013). Such an apartment would cost BDT 23.4 million in Baridhara and 7.15 million in Mirpur, which is obviously unaffordable for the middle-income group. Market trends are perhaps similar in other large cities.

(e) Major barriers to delivering affordable housing for the urban poor

There are many NGOs working for the livelihood improvement of the urban poor; however, none of them is working directly in affordable housing development (Rahman, 2002). There are a few initiatives by the local NGOs which include special dormitories for garment workers, mentally or physically disabled people, street children, orphans, and working mothers, as well as slum development, housing rights and management support. But most of those initiatives are one-off, suggested and supported by international development; this overlooks the issue of long-term financial viability (Stiles, 2002; Islam et al., 2007).

There are several problems regarding non-involvement of NGOs in housing. The high prevalence of urban poverty undermines housing need, so the priority mainly lies in facilitating income generation. Government policy has yet to recognise housing in the sustainable poverty reduction strategy (Mitlin and Mogaladi, 2013), thus policy support for subsidised land and finance for housing has not been addressed. Moreover, the majority of the urban poor, do not have legal land title (Rashid and Hossain, 2005). This situation is not favourable for the financing of housing. There are some specific concerns regarding affordable housing for the urban poor.

1. Policy problems. Affordable housing for the urban poor has always been undermined in housing policy (NHA, 1999). Housing policy has not addressed residential land supply for the urban poor, finance for construction, or recovery of such finance. Effective strategies could have significant impacts on affordable housing for the urban poor. Their relocation to peri-urban areas, or city fringes, appeared to be unsuccessful; the lack of income opportunities in the new areas ultimately push back the poor households to the city centre.(Ullah, 1994; CUS, 1988).

2. Poor market infrastructures. There are limited opportunities for housing construction and mortgage finance; in reality the urban poor have no access to financial markets (HBFI, 2014). The absence of clear land titles, higher interest rates, short term loan periods, higher transfer fees, the absence of a secondary housing market, and poor market regulations not only prevent housing supply, but also makes housing expensive (Mu, 2007; Kamal and Kamruzzaman, 2015).

3. Lack of affordability. The urban poor cannot afford formal housing at market prices. At the same time, the housing market cannot respond to the housing need of those poor (Khan, 2012a; Zaman, 2000; Sobhan, 2010), so a subsidy is expected at some stage of housing production.

4. Local powerbrokers. Slums in cities are controlled by local powerbrokers (Mollah, 2008; Hye, 2014). Any housing development on existing slum land is potentially challenged by those influential people affiliated with the political party in power. Political interference in housing plans may be expected in this regard.

5. Urban Form. The density of populations in major cities, particularly in Dhaka and Chittagong, complicates responses to the issue of housing upgrading. A gradual in situ upgrading of informal housing is unlikely to work; there is a need to undertake cellular redevelopment of apartment buildings, with relocation of residents at least temporarily. There are also issues around the allocation and control of land across the city e.g. vast areas are controlled by military and are not in productive urban use (Ahmed et al., 2014).

Various housing improvement strategies are practiced internationally. Chile adopts a holistic approach to affordable housing by policing land and finance (Rojas, 2001). Singapore adopted such policy in the 1960s (Phang, 2001). Other strategies include increasing of supply and regularising and improving existing slums (Sivam, 2014). A self-help approach has been adopted by many countries across the world as a way of improving the housing conditions of the urban poor (Berner and Phillips, 2005). For a poor country like Bangladesh, with scarce land and capital, no suitable solution has emerged. The approach to regularising slums could have merit, but such an approach might be challenged by the large concentrations of urban poor in cities, particularly in Dhaka and Chittagong.

2.4 Conclusion

Social capital has been the subject of increasing governmental interest in the last few years, particularly in Australia, the UK and Europe, because of its implications for, and association with, social wellbeing. The theory and concepts have significantly informed many government policy debates. The concepts are increasingly being seen as an important ingredient of personal and community wellbeing, which facilitates many outcomes of government policy. International agencies, such as the World Bank and the OECD, now view social capital as an important emerging area of inquiry, and international research institutes are presently exploring the concepts.

Figure 2.1 illustrates some of the key definitions, links, benefits and issues identified. The concept explores the interaction between people, and the value of this interaction in promoting trust and co-operation. It would appear that this interaction is important; however, there is less clarity about the optimum form of this interaction and the factors necessary to maximise its outcomes. It would appear that some interactions are more profitable than others in achieving particular goals and certain conditions.

There appears to be a close relationship between social capital and housing development. Social capital is generally thought to be a component of community cooperation; however, strong cooperation is thought to be more than networks of people who develop trust and reciprocity. A strong community is said to need a range of different capitals to engender a sense of belonging and participation.

The persistent economic growth of the country, which is largely driven by the urban economy, is attracting the poor to cities. The changing economy thus creates an ever-increasing demand for more low-income housing in cities for the poor households. Therefore, failure to ensure an adequate supply of affordable housing means that the additional poor would be obliged move to informal housing, generating social costs.

The uneven distribution of income and wealth has further hampered the poor in the acquisition of a minimal standard of housing (Rao and Hassan, 2012). The market economy has ensured housing for the upper-income group but has failed to deliver affordable housing to the poor (UN-Habitat and UNESCAP, 2008; Sobhan, 2010). Market mechanisms and institutions contribute to the choice of housing, while household income and house prices have pushed the poor into informal housing (Huang and Clark, 2002). It is unlikely that the poor can achieve adequate housing in the market process.

However, given the government's financial constraints and the scarcity of urban land, the non-market approach may undermine the potential to house the large volume of poor people. This situation would seem to indicate the need for an approach in which the benefits of a market approach are retained while delivering affordable housing to the urban poor in Bangladesh. The implications of social capital in such approach may have merits.

Chapter 3: Research Methodology

3.1 Introduction

Chapter 2 has discussed the theories of social capital and the approaches undertaken in its quantitative measurement (see Section 2.2). This chapter discusses the detailed methodology used in conducting this study. In Section 3.2, we discuss the philosophical ground for choosing the methodology, which is based on perspectives within social science research. This is then followed by a discussion of detailed methodology in Section 3.3. The methodology section discusses the quantitative approach which has been followed in the conducting of this study. The major aspects of the quantitative approach are discussed under the following headings: (i) the process of selecting the study participants; (ii) the measures used to address the research questions; (iii) the procedures followed in field survey; and (iv) the techniques employed in data analysis. Section 3.4 discusses the ethical considerations that have been taken into account in the whole process of this study. Finally, we discuss the different stages of the research.

3.2 Philosophical ground

Social research can be defined as the gathering of information on the social world, in order to better understand the real world (Hitchcock and Hughes, 1995: p. 5). The investigative process of conducting scientific social research is thus an important aspect. Depending on the academic discipline and the nature of the research topics, the *deductive* and *inductive* approaches are widely followed in scientific social research; though each approach has its limitations; there is also an interactive process, weaving back and forth between real world and theory, this is sometimes called the mixed method (Bryman, 2012b; Creswell, 2013). The researcher's perspectives on the relationship between the theory and intended social inquiry also influence the process. These are broadly defined as a system of beliefs or practices that influence researchers to select a particular method

for the study; these beliefs or perspectives guide the investigation and are views and beliefs about the nature of reality, knowledge and values (Morgan, 2007; Guba and Lincoln, 1994). Research philosophy encompasses two broad dimensions: ontology, and epistemology (Bryman, 2012b). *Epistemology* is the theory of knowledge, whereas *ontology* is the theory of reality, the fundamental nature of social phenomena. Ontological assumptions can be based on social phenomena, either independent of social actors (objectivism) or entirely dependent on the perception and interactions of social actors (constructivism). Such assumptions lead researchers to follow a particular methodology, in turn giving rise to issues of instrumentation and data collection (Hitchcock and Hughes, 1995).

In this study social capital is viewed as a social phenomenon generated through social interactions among social actors within social institutions (see Chapter 2). The norms and values of social institutions are constantly changing through social reconstruction and reaffirmation and through practices and modifications (Bicchieri, 2005). This study investigates the real world on the basis of theoretical assumptions about social capital, so the approach may be viewed as social constructivism. Theory has played an important role, and influenced the formulation of research enquiry (Fetterman, 2010) and the development of specific research instruments to attempt to capture the social phenomenon. The study relies on the participants in gaining the perspective to interpret the findings from a third person perspective.

The theoretical concepts in this study are derived from previous researchers' work (Bourdieu, 1986; Coleman, 1988a), some of which could be seen as grounded theory or constructivist in approach. These concepts have gained mainstream recognition, and this enables this study to treat them as relatively objective phenomena with generally accepted properties, and to proceed to measure them using large scale social survey techniques (see Maanen, 1988). The study measures relatively subjective phenomena, following the theoretical proposition to derive answers to the research questions. The approach may also be viewed as traditional positivism, as it relies on a set of empirical data. This approach assumes that the social world is fundamentally similar to the natural world, so in reality the social world is governed by social laws and values which explains the social life (Bryman, 2012b; Ryan, 1970). The perspective of the researcher in interpreting the real world is critical in the study, and may be viewed in line with the critical realism.

3.3. Research Method

This study has used a cross-sectional household survey designed to collect data on different aspects of the social capital of the urban poor in Bangladesh. Approximately 1,800 households from 18 clusters across three cities have been sampled, and data has been gathered via face-to- face interviews. In the following four sub-sections, details about the methodology carried out for this study, are discussed:

- Participants
- Measures
- Procedure
- Data analysis

3.3.1 The Participants

This study uses primary household level data. The survey was conducted in a collaboration between the Institute for Inclusive Finance and Development (InM), Bangladesh, formerly known as the Institute of Microfinance, and Heriot-Watt University, Edinburgh, UK. The households were interviewed in a two-stage sample design process. First, 18 primary sampling units (PSU) were selected from three cities representing different categories (the capital city, metropolitan cities and secondary towns). Then, 100 households were selected from each of the 18 PSUs, which included 11 poor slums and 7 comparator neighbourhoods. The poor neighbourhoods are essentially informal housing areas which largely lack proper utility services, and the land ownership is mixed, but is typically controlled by the local power-brokers, who rent informal housing to the urban poor. The comparator neighbourhoods were selected from slightly better-off areas nearby, where the next stage of mobility of the urban poor might have taken place. The purpose of selecting comparator neighbourhoods was to provide a comparison with the poor/slum neighbourhoods. Such distinctions might be obvious largely by the legal right to land, the availability of services (e.g. electricity, gas, school), and the somewhat higher income of the residents. Therefore, the characteristics of the comparator neighbourhood might indicate a comparatively better standard of living among the residents, which the poor households could aspire to. It should be noted here that the residents of the comparator neighbourhoods are also poor, but have access to higher social opportunities such as the legal connection of water, electricity, and gas, as well as access to schooling. Such conditions offer better livelihood opportunities to the

residents compared to those in poor/slum neighbourhoods. Therefore, the selection of comparator households was carefully drawn to capture those criteria.

The households were selected from both owner-occupiers and tenants. However, very few households in poor neighbourhoods own the land (CUS, 2006); it is either public or extended to the surrounded private land, where the *de facto* or private owners build substandard housing for rent. Field investigators visited the sample households physically to conduct the face-to-face interviews.

3.3.2 Measures

(Refer to Appendix A and Chapter 2 for details)

Measures are adopted based on the literature i.e. where some past study on the urban poor in Bangladesh influenced possible characteristics/questions/categories etc. The researcher's previous experience in field research with the InM also informed the research design. The study adopted a number of variables relevant to the research questions. Those variables are derived from social capital theories and literature which can be linked with Chapter 2. The variables can be grouped under the following four headings. Their names, natureand the type of data are presented in the tables below in the respective heading.

- Socio-economic and demographic characteristics
- Social network
- Trust
- Cooperation

3.3.2.1 Socio-economic and demographic variables

(see also Appendix A, Sections 1, 2 and 3 for details)

This part of the questionnaire aimed to collect responses on demography, community attachment, assets, expenditures, savings and debt.

<u>Demography</u>

Table 3.1: Demographic information of the households

Variable	Variable Type	Data Type
Sex of the household member	dichotomy	numeric
Age	continuous	numeric
Relation to the household head	categorical	numeric
Marital status	categorical	numeric
Level of education	categorical	numeric
Nature of educational institution	categorical	numeric
Occupation of the member	categorical	numeric
Nature of occupation	categorical	numeric
Daily trip distance	continuous	numeric
Monthly income	continuous	numeric

Different scales were used to obtain answers on seven categorical variables. For example, answer options for sex are male and female, whereas the answers options for the relation with household head or level of education are more than two and differ. For the continuous variables, the answer options were open.

Community involvement

3.2: Community involvement and housing

Variable	Variable Type	Data Type
Duration of living in the community	continuous	numeric
Whether born in the community	dichotomy	numeric
Sense of belongingness in the community	dichotomy	numeric
Ownership of land on which the HH is living	categorical	numeric
Status in the house	categorical	numeric
Person who collects the house rent	categorical	numeric
Number of rooms used	continuous	numeric
Average size of rooms	continuous	numeric
Duration of living in the previous community	continuous	numeric
Number of migrations in last 20 years	continuous	numeric
Reason for migration	categorical	numeric
Socio-economic loss from the displacement	categorical	numeric
Whether having National Identity Card	dichotomy	numeric

Multiple answers were possible for variables such as reason for migration and socio-economic loss.

Other financial variables

Household assets

Examples of household assets include land, rickshaw/van, bicycle, small machinery, furniture, TV, computer, mobile phone, ornaments and fridge. The number/amount and present market value were collected in numeric form.

Monthly expenditure

This variable includes expenditure on food, house rent, children's education, utilities, transportation, healthcare, mobiles, garments, loan and insurance instalments, incidental expenditures and others for the last year Data were collected in numeric form.

Financial debt and savings

This data includes debt and savings with the NGO/MFI, cooperatives, relatives, neighbours, friends and banks. In addition, data relating to debts with informal money lenders and to cash in hand wre also collected. All responses are in numeric form.

Vulnerability in terms of income, healthcare, housing, social justice

To assess the socioeconomic challenges and opportunities of the urban poor, the following issues were asked about; these are linked to social position and thus assumed to contribute to social capital (see Section 2.2.1, Chapter 2). A six-category Likert scale was used to record respondents' perceptions regarding the possibility of experiencing:

- risk of loss of job or income
- risk of eviction from the land
- risk of being affected by flooding
- risk of fire
- risk of the house being damaged by strong wind or rainfall
- risk of receiving unequal treatment in workplace/education/health services/public transport
- risk of being accused of theft or crime
- risk of being harassed by the police, local leaders or political leaders
- risk to health from daily work
- risk to health from living environment
- improving social dignity

The highest order of 6 in the Likert scale was employed for the 'highest possibility', and in contrast, the lowest order 1 was employed if there was 'no possibility'.

Vulnerability if attempting to access local government services

To assess such vulnerability three questions were asked:

- whether, in the last year, any member of the household sought services from the police, hospital, court of justice, or other government branches
- if sought, whether the member received any service or not

Answers to both questions were either 'yes' or 'no'

- in cases where member sought the services of any of these three organisations but did not receive them, then they were asked to select the reason for this from a list of five answer options[4] (see Appendix A)

Access to finance

If any member of the household was involved with the Microfinance Institution (MFI), the data on the following variables were collected (Table 3.3).

Table 3.3: Access to finance

Variable	Variable Type	Data Type
Frequency of visit by MFI official	continuous	numeric
Year of joining in MFI	continuous	numeric
Number of MFIs involved with	continuous	numeric
Number of family members involved	continuous	numeric
Total debt with MFIs	continuous	numeric
Frequency of MFI group meeting	categorical	numeric

Data on MFI involvement (where multiple MFIs were found) were recorded for a single member of a household. The frequency of MFI meetings was coded into seven categories, between 1 for 'daily meetings' and 7 for 'no meetings' at all.

Again, to assess access to formal finance from banks, data from the following questions were collected:

- whether the respondent sought any loan from the formal bank
- if sought, whether the loan was granted
- the perception on *whether the participants would get a loan, if they asked for it*

[4] 1= no reason; 2=wanted bribe; 3=didn't take my complaint seriously; 4=the mediator wanted a bribe; 5=other

The answer formats were ‘yes’ and ‘no’. Again, perceptions regarding the difficulties of getting a loan were divided into six categories.

3.3.2.2 Social Networks

Various aspects of social networks were taken into consideration while preparing the research questionnaire. If the perceived scope for socialisation and social interaction, the actual bonding network, the bridging and linking network and cultural capital were known, then an overall notion of social capital could be achieved. Therefore, questions were prepared to look at those aspects (see Section 2.2.4, Chapter 2).

Scope for socialisation or social interactions

To understand the scope for socialization, data were collected using the questions below in addition to the data collected on formal education and occupation in the social identity section.

Table 3.4: Scope for socialisation

Variable	**Variable Type**	**Data Type**
Whether living in a joint family	dichotomy	numeric
Whether sharing with another family	dichotomy	numeric
Number of families living together	continuous	numeric
Number of members if living together	continuous	numeric
Number of relatives living in the community	continuous	numeric
Whether neighbours invited to occasion like marriage	dichotomy	numeric
Where they celebrated Eid/Puja in last five years	categorical	numeric

Information on the scope for social interaction is captured by a number of questions on whether the participants attended various social gathering in the community, or outside of it, and whether they received any help last year.

Table 3.5: Scope for social interactions

Variable	Variable Type	Data Type
Number of family members attending mosque/*Madrasa*	continuous	numeric
Frequency of attending mosque/*Madrasa*	categorical	numeric
Time spent in mosque/*Madrasa* on each visit	continuous	numeric
Number of neighbours' households visited daily	dichotomy	numeric
Time spent on each visit to neighbours	continuous	numeric
Number of persons met through daily work	continuous	numeric
Time spent with each person	continuous	numeric
Frequency of meeting in the community	categorical	numeric
Duration of the community meeting	continuous	numeric
Frequency of attending the community meeting	categorical	numeric
Time spent on a community meeting	continuous	numeric
Frequency of attending meetings outside	categorical	numeric
Time spent at an outside meeting	continuous	numeric
Frequency of attending if any other meeting held	categorical	numeric
Time spent at other meetings	continuous	numeric

Frequency codes assigned as 1 for 'never' attended/visited/met, and, in contrast, 6 for attended/visited/met once every two years.

Bonding and bridging or linking networks

To obtain perceptions of bonding networks (See Section 2.2.2.2, Chapter 2), the participants were asked whether they maintained any contact with the persons in the table.

Table 3.6: Bonding networks

Variable	Variable Type	Data Type
Relatives	dichotomy	numeric
Friends	dichotomy	numeric
Neighbours	dichotomy	numeric

Variable	Variable Type	Data Type
Coworkers	dichotomy	numeric
Parents of children's friends	dichotomy	numeric
Community leaders	dichotomy	numeric
Others (if any)	dichotomy	numeric

If the participants answered 'yes', then they were further asked about the number of persons in each of the above categories with whom they maintained contact, and whether those contacts were living in the same community. Also, the question was asked of how frequently these others were contacted in the last year, and a list of coded answers was given.

The question further moved to extract the notion of 'help received' in the past year from those persons listed. There was a list of eleven co-operations, from which the participants chose one or more cooperative interaction (see Appendix A).

To obtain views about bridging and linking networks, a similar set of questions examined whether the participants involved or maintained contact with a party, group, organisation or persons with higher social status; the answer options to these were 'yes' or 'no'.

Table 3.7: Bridging and linking networks

Variable	Variable Type	Data Type
Member involved with a political party	dichotomy	numeric
Relative involved with a political party	dichotomy	numeric
Member maintained contact with any professional	dichotomy	numeric
Member maintained contact with any businessman	dichotomy	numeric
Member maintained contact with any govt. service provider (water, gas, electricity, etc.)	dichotomy	numeric
Member maintained contact with any voluntary organisation (legal, healthcare, education support)	dichotomy	numeric

Variable	Variable Type	Data Type
Member maintained contact with any NGO	dichotomy	numeric
Member maintained contact with any local government employee	dichotomy	numeric
Member maintained contact with the police or justice	dichotomy	numeric

If the participants answered 'yes', then, they were asked about the number of the party, group, organisation or persons in each of the above categories with whom they kept contact, and whether the person/persons were living in the same community. Moreover, the question was asked of how frequently the respondent made contact during the last year, and coded answers were given as with the bonding network.

Similarly to the bonding network, the question further moved to enquire about the nature of any help received from the party, group, organisation or persons over the last year.

Cultural capital

The cultural content, or the associations of social interactions which help build social networks, is considered an important aspect of social capital (see Section 2.2.3.4, Chapter 2). Perceptions of cultural capital were captured through the lens of culture, relating to issues such as: attending religious meetings or religious group meetings, political meetings or demonstrations, voluntary work, social clubs, national celebrations such as Independence Day, language day and environment day. The participants were asked whether they attended those events and gatherings. If so, the frequency of attending those meetings, demonstrations, clubs and celebrations was recorded, following a frequency code similar to the one used in the social network section.

3.3.2.3 Trust

Trust in People and Organisations

To gain an idea of the participants' trust in networks, they were asked to rank among relatives, friends, neighbours, coworkers, group members, community leaders, political leaders, NGO officials and religious leaders, whom they trusted. The three questions asked were:

- who they would prefer to lend money to, if they could
- who they would trust to look after their house in their absence
- who they believed would help them in an emergency situation

These questions helped to rank the trust in bonding networks.

Then, to assess trust in public and formal institutions, the participants' opinions were sought on a 6-point Likert scale between 'agree' and 'disagree' with the following eight statements:

- the local government provided necessary services in the community
- services from the police were available if needed
- the justice system was impartial to all
- the water supply authority provided necessary services
- the electricity distribution authority provided necessary services
- the political party worked for the wellbeing of the common people
- the national NGO worked for the economic development of the people
- the international NGOs worked for the economic development of the common people

3.3.3.4 Cooperation

How trust and reciprocity may be translated into cooperation can be found in the literature (see Section 2.2.4, Chapter 2). Based on an understanding of the literature, several questions were asked on how the urban poor cooperate with each other. The questions had two aspects: a) financial cooperation and b) non-financial cooperation.

The participants were asked:

(i) whether any incidence of financial cooperation occurred in the community in last one year
(ii) if so, what kind of cooperation
(iii) whether any member of the household took part in that cooperation
(iv) whether any member received any financial cooperation from the community
(v) whether the participants cooperated with others in the community
(vi) if they received cooperation, then who cooperated

(vii) who the participants believed would help in future financial cooperation in an emergency

(viii) and (ix) asked for details about how much money, and the level of cooperation, if the participants received any financial cooperation or believed they would do so in an emergency.

A similar set of questions to those used in the financial cooperation section was employed, and answer options were provided to access data regarding non-financial cooperation. The only difference was that 'the amount of financial cooperation' was replaced by 'the nature of non-financial cooperation' and interviewees picked one or more appropriate answers from a list.

3.3.2.5 Housing and services

Since the study intends to inform affordable housing for the urban poor, the participants were asked questions relevant to the scope for housing development.

Table 3.8: The scope for housing development

Variable	Variable Type	Data Type
Problems of living in the community	categorical	numeric
Desire to live in a house/flat with essential facilities	categorical	numeric
Intended duration of living in such house/flat	interval	numeric
Opinion on 'no objection to shared kitchen'	ordinal	numeric
Opinion on 'no objection to shared toilet'	ordinal	numeric
Opinion on 'care of shared facilities'	ordinal	numeric
Suitable location of the desired house/flat	ordinal	numeric
Capability to make a deposit on desired house/flat	continuous	numeric
Capability to pay the balance over next 30 years	categorical	numeric
Capability to pay instalments of more than the house rent	dichotomy	numeric

Variable	Variable Type	Data Type
Trust in organisations for the development of such house/flat	ordinal	numeric
Preference for important facilities	ordinal	numeric

A list of eighteen issues that might create problems for residents living in the community was given to answer question 1. For question 2, the participants were asked to rank their preference for the present community location, a location close to the current community, the outskirts of the town, or a place where the opportunity for earning is secured.

For the question on trust in organisations, the respondents were given a list of six options and asked to rank them:

(i) central government
(ii) local government
(iii) national MFI/NGO
(iv) international NGO
(v) private developer
(vi) other, if mentioned

Distance from major community facilities

Locational attributes are an important aspect of housing upgrading, because these attributes affect the suitability of the housing. The poor typically prefer their housing to be near the city centre, where the access to opportunities is greatest (see Section 2.3 of Chapter 2). For the question on preference to important facilities, respondent were asked to rank services like grocery shops, bus stops, work facilities, schools, shops, playing fields, security, railway stations, good transport facilities, hospitals, mosques/*mondirs*, local environments, and others, if any, that were important to a community. Also, the important facilities of the current community were listed in the format below, and respondents were asked to estimate the distance to these facilities in kilometres.

Table 3.9: Distance from major community facilities

Variable	Variable Type	Data Type
Grocery shop	continuous	numeric
Bus stop	continuous	numeric
Railway station	continuous	numeric
School	continuous	numeric
Government hospital	continuous	numeric
Community clinic	continuous	numeric
Government offices	continuous	numeric
Shops	continuous	numeric
Playing field	continuous	numeric
Mosque/*mondir*	continuous	numeric

3.3.3 Procedure

3.3.3.1 Sample size calculation

The aim was to have a sufficiently large sample to draw reasonably confident conclusions on the incidence of particular phenomena, to compare different groups/areas, and to estimate effective models to explain and predict variations in aspects of social capital. The target household sample size was calculated based on 18 sample clusters selected from three cities having more or less 1,000 households, allowing for a 95% confidence level of the study neighbourhoods resulting in 807 HHs. Since the survey is a cluster sample rather than a simple random sample, the sample size has been multiplied by the design effect (D), which is commonly ranged from 1.5 to 3.0 to correct the difference in design. In this study, D value was considered 2 as the population characteristics are truly homogenous: n*2 =807*2= 1614. The sample size was further increased by 10% to account for contingencies such as non-response or recording error. Thus, the final sample size was: n + 10% = 1775 households from 18 PSU.

3.3.3.2 Sampling errors and precision

Since the study does not include every household within the population of interest, the sample mean might differ from the population mean. This difference is attributable to sampling error. The margin of error is a broader way of expressing sampling error, which measures an uncertainty about the estimates.

The term 'social capital' is a collective measure of a number of qualitative variables such as social identity, mutual trust, social networks and cooperation; perceptions in relation to those psychological attributes vary widely. Therefore, it seems imprudent to be restricted within the lower level of precision. Thus a 5-10% margin of error in estimation has been targeted, which seems to have been reasonable for the qualitative nature of the data set, to obtain a convincing statistical inference.

The response rate was very satisfactory. More than 90% of the sample households, in 11 target clusters of urban poor, participated in the interviews. Almost certainly, compensation (BDT 100 (£1) for 45 minutes interview) for participation boosted the response rate. But the response rate was mixed in seven immediate higher income clusters, where households were somewhat more reluctant to participate in the interviews. In such cases, the surveyors were asked to approach the next sampled household until they found one that would participate. Finally, they managed to interview 100 households from each of 18 clusters. Moreover, non-response error was taken into account while calculating sample size; therefore, the initial sample size was increased by 10% to account for contingencies such as non-response or recording error.

3.3.3.3 Sampling distribution

Certain assumptions were made while selecting and calculating the sample size, in order to get a general picture of social capital of the urban poor in Bangladesh. Different groups were assumed to have different levels of social capital, based on the premise that the social capital of the urban poor in Dhaka city would differ from that of the urban poor in other cities; or that the social capital of the urban poor living on their own land would be different from that of tenants. Again, the tenant group living on public land would be different from the tenant group on private land within the same city. Differences are also likely to be found between the social capital of microfinance borrowers and non-borrowers within the same community.

This study has tried to include as many dimensions of groups as possible, in order to obtain comparable data sets for a deeper understanding of the extent and nature of the social capital of the urban poor.

The study adopted a multistage cluster sampling design. At first, two metropolitan cities (different in the nature of their socio-economic conditions), and one secondary city (with the highest *per capita* income in Bangladesh) were selected in consultation with local experts.

The clusters were selected on a random basis in two metropolitan cities. Primary sampling units (PSUs) have been used for a sampling frame of clusters, based on the Bangladesh Bureau of Statistics (BBS) and the publication/report "The Slums of Urban Bangladesh in 2006" from the Center for Urban Studies (CUS). It is worth noting here that no other such census on urban poor clusters was carried out between the 2006 CUS study and BBS census survey in 2014. The official report from the BBS survey had not been published when this survey began in September 2014. However, I took the opportunity to use the unofficial record to sample the households in the study areas.

The CUS study provided a list of PSUs throughout the six metropolitan cities, each containing varying numbers of households in the cluster. However, this study has considered those PSUs as having, more or less, 1,000 households.

No such sampling frame for the selection of PSUs was available to choose clusters from the secondary town, Kushtia. However, the Coalition for the Urban Poor (CUP), a confederation of all NGOs working for urban poor, had reasonable numbers of households for conducting this survey, and so provided a basis for the selection of the PSUs.

Moreover, in the process of selecting comparable clusters, the study also tried to capture some clusters with attributes such as being economically adjacent to the sample clusters, so that comparisons could be drawn regarding social capital among clusters with differing socio-economic status.

In the second stage of the research project, 11 sample PSUs were selected randomly from the lists of 141 clusters from three cities. In addition, seven sample clusters from immediate higher-income groups were selected based on contextual knowledge. The

rationale of selecting 18 clusters is to make the project feasible in terms of reliability, time limits and resource constraints.

In the third stage, 1775 households were divided by 18 clusters, which yielded 99 households per PSU, then rounded to 100, to be selected on a random basis. Dhaka's PSUs were the highest in number because Dhaka alone accommodates around 55% of the total urban poor in the country.

Only one eligible representative from each sample household was interviewed. If an indexed household representative was not available for the interview, the next sample household became involved.

3.3.3.4 Sampling bias

There was a discrepancy between the BBS census and CUS study pertaining to the demarcation of the cluster. I followed the BBS demarcation model, which is based on local administrative units. However, it was very difficult to follow the exact demarcation of the clusters in Chittagong and Kushtia. Given time restrictions and limited resources, the surveyors were able to gather major information on up to one thousand households, at best, from one side of the communities. Then random sampling of households was made from the lists. In a few clusters, and particularly in the higher income clusters, there would be more than one thousand households. Also, non-response rates in the higher income clusters might have an effect on sampling bias.

3.3.3.5 Inclusion criteria

The study interviewed participants living in the urban poor clusters in Dhaka, Chittagong and Kushtia. Participants also included households from immediately adjacent economically developed clusters, where the social mobility of the urban poor is supposed to be evident (comparator areas). The research surveyors only interviewed those who gave verbal consent to participate.

3.3.3.6 Exclusion criteria

The surveyors excluded those participants who were reluctant to participate in the interview (self-exclusion).

3.3.3.7 Survey instrument

Face-to-face interviews were conducted on the basis of a structured paper questionnaire. This was initially developed in English; however, considering the local circumstances of the study area, and the surveyors' capacity to explain and communicate with the participants, it was finally translated into Bengali before sending it for the field test, and then to the press for printing. It was really helpful for the surveyors to communicate some of the questions with the participants. Simple and plain language was used to construct the questions, and the possible answers options were available immediately thereafter.

The questionnaire consisted of five major sections. The first, second, and third parts were on demographic, social and economic characteristics of the household. The fourth section consisted of various aspects of social capital: networks, trust and cooperation. The fifth and final section was about the scope for housing development for the urban poor, where the respondents' opinions on how they wanted to improve their housing were sought.

3.3.3.8 Surveyors and training

To collect data, ten surveyors and one research assistant, all graduates willing to do a full-time job for two to three months for this survey, were recruited on a contract basis. An intensive three-day training course was provided, which explained the detailed objectives of the study as well as the contents of the questionnaire. Training also included lectures on ethical issues in research, on how to communicate with participants and on how to complete the questionnaires; mock interviews; and adherence to institutional compliance with recruitment. Based on the performance and sincerity of the training participants, an assessment was made for the final selection. Finally, ten surveyors were recruited, provided with necessary field kits and a salary advance, and sent into the field for interviewing.

Considering the low literacy rates of many of the poor respondents, surveyors were asked to explain each question politely to the participants during a face-to-face interview. Each interview took an average of 40-45 minutes to complete the questionnaire. The survey itself was extensively supervised and monitored by the research assistant as well as the principal researcher, who is also the thesis author.

3.3.3.9 Risk assessment and risk management

Risk for the interviewers

The potential risks for the participants might be personal. For instance, participants might not feel comfortable disclosing financial information. On the other hand, potential risks for the interviewers might be in reaching the sampled households due to disappearing pathways and the slippery roads around the slums. As the survey was conducted by both male and female interviewers, there might be some potential risks for the females. So interviewers were sent in groups in which female interviewers were accompanied by a male. This had the added advantage of female resident householders perhaps being more willing to speak with a female interviewer.

Risks for the investigator (myself)

There were no risks perceived for the investigator in relation to this field study, since the survey was conducted in his home country and since the respondents do not belong to any specialised group. Moreover, he had had extensive field survey experience with the same groups while working with the Institute for Inclusive Finance and Development (InM).

Risks to the Participants

The study participants may have felt discomfort in answering some confidential personal questions. The interviewers were asked to take necessary steps to protect respondents' privacy and confidentiality.

Other Risks

Natural calamities, particularly flooding, are very common in Bangladesh during the monsoon season, and rain in particular might have an impact on the data collection process. Therefore this survey was conducted in the late winter season, when rain and other natural calamities are unlikely; this timing avoided any climate/weather-related interruptions to data collection.

3.3.3.10 Risk management

The investigator did not conduct the actual interviews due to other managerial responsibilities. Interviewers were recruited and trained to sensitise them to the potential personal and psychological risks for the participants. Since the interviewers were trained,

they could explain the importance of this research and ask for permission to begin the survey. They explained the nature of the survey so that the interviewees knew what to expect. They also explained that an individual respondent might be embarrassed or feel uncomfortable during the interview. If the interviewer felt that interviewing a particular respondent might compromise his/her privacy, s/he did not continue the interview, and went on to approach the next respondent. If a participant became uncomfortable during the interview, the interviewer stopped questioning.

Interviewers' safety

Since the investigator had previous experience of conducting surveys on sensitive (slum) populations in Bangladesh, he trained the interviewers on how best to safely approach the households. Also, local political and social leaders (ward commissioner and slum leader) were contacted before interviewers visited households in a particular PSU. When the survey process is supported by the community leaders, there are fewer risks for the personnel involved in the survey, and this researcher is well aware of these issues.

3.3.3.11 Data collection period

Initially, the data collection period was scheduled for between May and July 2014. However, due to unavoidable circumstances relating to the external funding body, there was a substantial delay in the process of starting the field survey. It was not possible to start interviewing until the funds were released in the middle of September 2014.

Later, the survey period was shortened to finish within two months, therefore lasting from September 15th to November 14th 2014. However, various field circumstances led to an extension of a further five weeks.

In the first phase, between September 15th and October 2nd, the survey was started simultaneously in the two cities of Chittagong and Kushtia. The surveyors interviewed 600 sampled households from 6 PSUs before they returned for the Eid holiday. The survey could not resume until 18th of October because all offices were closed for national holidays, and a portion of the urban poor households moved to celebrate Eid.

The second phase of interviewing started on October 18th. The surveyors again went to Chittagong and Kushtia to interview the remaining 400 sampled households from 4 comparator PSUs. Having finished interviews in Chittagong and Kushtia by the 31st of

October, they started interviewing 800 sampled households from 5 poor and 3 comparator PSUs in Dhaka. Finally, the total survey was finished by the third week of November 2014.

3.3.3.12 Difficulties and challenges in the fields

- It is worth noting here some challenges that I encountered while identifying the PSUs for the study. I managed to carry this out in consultation with the local people.
- It was challenging to identify the immediate higher income PSUs, where social mobility of the urban poor might have taken place. No statistics are available that could represent these groups; no demarcation is available to easily identify them. However, using contextual knowledge and in consultation with a number of local scholars, it was possible to identify the groups I wanted.
- The perception of social capital might vary between male and female respondents. Again, similar questions might be raised from the differing perspectives of the interviewers.
- Progress was more or less interrupted in all three cities in a number of ways. To minimise those challenges, the following alternatives were necessary:
    - Except in Dhaka, the lists of poor households were not available; therefore the surveyors had to prepare a list of households living in the PSUs in Chittagong and Kushtia before sampling and interviewing could take place. However, the unofficial household record from BBS on clusters size helped in the sampling of households in Dhaka city
    - Local powerbrokers stopped the interview process in two PSUs in Kushtia. The problem was overcome locally, after communicating with the local political leaders and city mayor
    - The heads of households who were targeted to take part in the interviews were largely absent during the day, so the surveyors had to visit them on the previous day to inform them about the next-day interview. In many cases, the surveyors had to revisit the household to complete the interview
- A small number of communities in Kushtia and Dhaka refused to accept compensation, because of the suspicion that this might lead to enlistment for

eviction. They said that earlier they had received threat of eviction after such interviews. So the participants discussed the issue with their community leaders who allowed the surveyors to conduct the interview; but the latter were prohibited from providing any compensation to the interviewees.

3.3.3.13 Data entry and management

The answer scripts were largely closed, with several options, and the data were captured using Intelligent Character Recognition (ICR) technology.

3.3.3. 14 Data management and data handling

The survey data is legally owned and retained by the InM and Heriot Watt University, UK. For use of the data by a third party, a record of their location must be filed with the both institutions.

3.3.3.15 Privacy and confidentiality

Each sampled respondent was provided with a verbal explanation of the objectives, general content and time commitment involved in participating in the survey, and was given assurances of confidentiality. They were given the opportunity to ask any questions during the interview, and provided with the name and telephone number of the local contact person (local investigator) who could answer questions before and after the interview. The sample respondents were free to decline to participate in the interview and/or refuse to answer any specific question. Furthermore, once interviews were completed, the responses were verified for completeness and internal consistency, and any information linking data to respondent were kept secret.

3.3.3.16 Sources of funding and budget

The funding for the survey was secured primarily from InM, Bangladesh. The costs associated with the investigator are borne by Heriot-Watt University, Edinburgh.

Table-3.10: The indicative prices direct for the field study (estimated)

Sl.	Item	Number of item	Per unit costs (Tk)	Total costs (Tk)
1	Questionnaire Printing and Photocopying (15 pages)	1900	100	190,000
2	Training of Interviewers	10 enumerators*3 days=30	1,000	30,000
3	Training & survey kits for Interviewers	10	1,000	10,000
4	Interviewers salary	10*2 months=20	25,000	500,000
5	Research Assistant	1*6 months=6	30,000	180,000
6	Accommodation	10*20 days=200	400 *(required for Kushtia & Chittagong)*	80,000
7	Transportation (inter-city & local travel)	10*40 days=400	200 *(subject to actual travels)*	80,000
8	Food	10*20 days=200	250 *(required for Kushtia & Chittagong)*	50,000
9	Data entry & cleaning	1900	100	190,000
10	Contingencies			200,000
	Total			1,510,000*

* £1=BDT 100 (approx.)

3.3.4 Data analysis

The literature on social capital implies that there are different dimensions of social capital; there are causes, manifestations and consequences. Different kinds of social 'networks' are viewed as manifestations of social capital that are influenced by the endogenous social factors, whereas trust and cooperation are viewed as the consequences of social capital. Again, social capital may be generated in macro and micro social (and spatial) contexts (see Figure 2.1, Chapter 2) (Brehm and Rahn, 1997; Inkeles, 2000). There are issues concerning the sources and consequences of social capital, such as whether it is formed in an individual context, how it is influenced by physical and human capital, or how psychological traits contribute to the generation of social capital. The underlying associations among various aspects of social capital are deeply rooted in socioeconomic and cultural contexts, so to look only at the direct relationships among variables might obscure the implicit or indirect association. In short, there are complex issues surrounding the measurement of social capital and the interrelationship of different elements, and these need to be considered at the analysis stage.

Different technical approaches to analysis are employed for different purposes in subsequent chapters. A simple descriptive analytical approach, involving tables and graphs, is used to answer Research Question 1: *How is the socio-economic condition of the urban poor linked to socio-economic vulnerability?* (see Chapter 4). The mean estimates of the variables on demography (the social and economic characteristics of the sample households) provide an overview of the study population. The estimates also provide a comparison between the samples of poor and comparator areas, as well as comparisons among neighbourhoods and cities.

A similar descriptive analytical approach is used to address Research Question 2: *What is the nature and extent of social capital of the urban poor?* (see Chapter 5). The descriptive statistics provide a comparison of different aspects of social capital. This analysis helps to explore the nature and extent of the social capital of the urban poor in Bangladesh.

Chapter 6 analyses Research Question 3 (on trust): *How is individual trust affected by [social networks and] contextual factors?* In the first sections, the Ordinary Least Square (OLS) estimation is used to analyse the relationships between 'trust' in bonding and bridging networks and the networks' size and strength, income, and living period. This section informs the later section where we analyse the trust of the poor in particular networks, which are important for urban livelihood. In the following section, trust in neighbours is analysed using Probit and Logit estimation methods. Necessary discussion on these Probit and Logit models is introduced at the start of the section.

Chapter 7 analyses Research Question 3 (on cooperation): *How is individual experience of cooperation affected by the context?* In the first section, the Ordinary Least Square (OLS) estimation is used to analyse the relationships between 'cooperation' across networks and trust, the networks' size and strength, income, and living period. In the later section, the analysis of individual cooperation among neighbours is made based on contextual factors. The necessary discussion can be found at the start of the section, but here we discuss the contextual effects.

3.3.4.1 Contextual effects

A contextual effect is similar to the neighbourhood effect. The idea of context is assumed to mean that the effects of socioeconomic factors may cross the boundary of

neighbourhood (Blalock, 1984). Such an effect might be seen in a city, assuming that socio-economic structure varies significantly across cities and so affects socioeconomic characteristics of neighbourhood in a particular city in which the urban poor live. (Buck, 2001; Overman, 2002; Galster, 2007; Friedrichs et al., 2010; Blalock, 1984; Sampson et al., 2002; Manley et al., 2013). Such effects are significantly altered by the social processes and influence of the household characteristics, such as income and assets, or childhood achievements. It may also influence a neighbourhood's collective social characteristics, such as social norms/behaviour and social exclusion.

The group level variables influencing individuals, and the observed variables defining an individual's behavioural variation, are necessary elements to an analysis of contextual effects on social capital outcome, i.e. cooperation. Group level variables, such as groups' norms of trust and reciprocity, and neighbourhood characteristics, are expected to affect the individual's behaviour. Again, some individual-level characteristics, such as income, assets and living period, would also affect the individual behavioural outcome. The relationship between group-defining variables and the observed individual characteristic might have implications for the inference of the estimated relationships. This means that there is a potential endogeneity issue in the analysis of social capital, which can be discussed in the light of Manski (1993). There are three kinds of effects that are observed in social interactions:

- *Indirect effects* are the effects of endogenous characteristics of individuals that influence behaviour; there is a tendency for individuals to behave differently from the group in some ways. This means that there are some characteristics at individual level which vary among households, and may influence individual behaviours. For example, income, assets, education and living period would vary among members, and this would lead to differences in individual behaviour between two people despite their sharing the norms and values of the neighbourhood.
- *Direct effects* relate to some variables that affect an individual's behaviour in the group. For instance, social behaviour (the degree of trust or cooperation) of the individual would vary across cities or neighbourhoods. This indicates the contextual effects.
- *Correlated effects*: there are some variables that might influence an individual to behave similarly to the group. For example, the poor (slum dwellers) are likely to

behave similarly, and in ways that are somewhat different from other (e.g. comparator) groups.

Different effects of observed endogenous variables, particularly those relevant to social capital, have been discussed at length (see Durlauf, 2002; Brock and Durlauf, 2001).

Such different levels of effects invite a more sophisticated econometric analysis of relationships. This study has followed the hypothetical social capital estimation models of (Durlauf, 2002), which deal with the major concerns of the exchangeability error and identification problems in estimating social capital. These two problems are discussed at the beginning of the relevant section in Chapter 7. Individual social cooperation is estimated in two situations:

Model 1: when social capital is predetermined
Model 2: when social capital is codetermined

In both situations, structural equation modeling (SEM) is employed to estimate the direct, indirect and correlated effects of variables affecting the outcome. Parameters from other estimations are also compared.

3.3.4.2 Structural equation modelling (SEM)

SEM is a combination of exploratory factor analysis in a multiple regression system (Ullman, 2001). SEM is a technique that extends the possibility of identifying relationships among the variables (Schreiber et al., 2006). SEM makes a distinction between the exogenous factors (independent variables) and endogenous factors (dependent or outcome variables). The exogenous and endogenous variables can be observed or unobserved depending on the model being tested. Within the context of structural modelling, the exogenous variables represent those constructs that influence other constructs but are not themselves influenced by other factors in the model. Those constructs identified as endogenous are affected by other endogenous variables in the model.

The measurement model of SEM estimates the pattern of relationships between the observed variables and those latent constructs in the hypothesised model. The measurement model is used to examine the extent of interrelationships and covariation among the latent constructs. The structural model displays the interrelations among latent

constructs and observable variables in the proposed model as a succession of structural equations.

The total effect of a variable or construct is the summation of the direct and indirect effects of this variable/construct on outcome. Although the focus of structural modelling is on estimating relationships among hypothesised constructs, one can use structural modelling to test experimental data, where one or more of the variables have been manipulated. In sum, SEM allows a researcher to test theoretical propositions

3.4 Ethical considerations

According to the *Framework of Research Ethics* of the Economic and Social Research Council (ESRC) in the UK, six broader ethical aspects in research should be considered while conducting a study (Bryman, 2012b): (i) the study must be well designed to achieve high quality; (ii) researchers and subjects must be fully informed about the purpose, methods and intended uses of the study; (iii) confidentiality of information must be maintained and anonymity of the participants respected; (iv) the involvement of research participants must be entirely voluntary; (v) any harm to participants must be avoided; (vi) the independence of research must be made clear, and any conflicts of interest and partiality must be explicit. These issues were considered with sincerity while conducting this research, and efforts were made to avoid the potential transgression of ethical values. Two evaluation committees[5] have examined the ethical concerns before starting the field survey conducted for this research.

(i) The study has followed a well-structured design to ensure high quality. The respondents of this study were not involved fully with the whole research process, but they were involved in the process of information collected for this study.

(ii) The researcher was fully informed about the purpose, methods and intended uses of the research. The subjects were also informed of the purpose and uses of this research; this information was shared during the interviews.

(iii) Individual information has not been reported anywhere, so there is no transgression of research ethics in terms of confidentiality of information.

[5]Heriot Watt University, Edinburgh, and the Institute for inclusive Finance and Development (InM), Bangladesh)

(iv) The respondents had the option to skip any questions, and there was no forced participation in the interview. Flexibility was allowed in interview time; in some cases the interviewers visted more than once to complete the interview.

(v) Participation in the interview did not pose any threat to the respondents. Questions that might affect a respondent's psychology were excluded. The participants were compensated (BDT 100 for 45 minutes) for their time.

(vi) This research was conducted in collaboration with InM and HWU. There is no known affiliation bias, and no potential conflict of interest is observed.

3.5 Conclusion

The research process can be summarised as follows: First, a topic area of social capital of the urban poor was identified and explored through literature review, followed by the formulation of research questions. In the next stage, a theoretical basis related to the topic has been investigated to inform the strategy for addressing the research questions, again based on literature. The research strategy entailed the selection of a quantitative approach and preparation of the structured questionnaire. Then I sought funding and collaboration for the field survey data collection. This phase was followed by significant data checking, cleaning and (where necessary) imputation. Once the field data was ready, the next stage involved identification of the appropriate analytical methods and the step-by-step analysis of data. The analysis has gone through several iterations to improve the clarity and effectiveness of the methods. The final stage has been devoted to writing up and development of the thesis in consultation with the supervisor and other resources.

Chapter 4: Study Area Profile

4.1 Introduction

Chapter 4 provides an account of the study population, with particular focus on the urban poor living in informal housing (slums) in three locations in Bangladesh. The chapter focuses on the dynamics of urban poverty, the characteristics of the urban poor and of the poor neighbourhoods, and the nature of migration among the poor. These accounts are intended primarily to address Research Questions 1: *How is the socio-economic condition of the urban poor linked to their socio-economic vulnerability?* Thus they seek to provide context for the study population. Such a socio-economic context is important, particularly if it can help to explain the nature and extent of social capital and its implications for affordable housing for the urban poor in Bangladesh.

4.2 Dynamics of urban poverty

Reference to the history of urban poverty in Bangladesh is minimal; this might hint at the country's focus on rural poverty (Bashar and Rashid, 2012; Banks, 2016; CUS, 2006). This does not mean that urban poverty did not exist; but since urbanisation itself was minor, it is understandable that urban poverty was ignored. This lacuna means there is little historical base to lean upon while shaping and developing urban policies for this relatively young country. A few studies on the slums and urban poverty in Bangladesh have been carried out, but they were mostly in Dhaka. Also such research initiatives were not systematically conducted by the government, but rather by individuals or private/non-governmental organisations (Akther et al., 2006; Amin, 2007; Begum, 2009; Islam, 2001; Islam, 1996). The first large-scale survey on 'slums and floating people' was conducted by the government in 1997, in six city corporations and some municipal towns across the country (BBS, April, 2015). However, in 2014 the government conducted a similar survey

which includes all 7 city corporations, 64 district towns and 489 *upazila*[6] towns.[7] The history of the database on urban poverty is not long, thereby somewhat inhibiting any attempts to review the issue of urban poverty in Bangladesh (see Chapter 2 for details).

Most of the previous studies were independent surveys, and there has been almost no attempt to stitch the extant research into a composite whole (Islam, 2002; Hossain, 2008; Nabi, 2002; Shakur, 2008). This chapter has collated information collected for this study and tried to connect it with earlier studies. Generally, the poor are largely housed in slums or squatter settlements. These neighbourhoods do not contribute to the visual beauty of a city, and are discordant with the traditional image of economic progress (Hye, 2014). Therefore, slum neighbourhoods are offensive to the state and an eyesore to other city dwellers. Urban poverty also arguably 'hides' inside the 'informal housing'[8] in other formal neighbourhoods which accommodate the middle- or lower-middle-income city dwellers. Such informal housing, whether in slums and squatter settlements or in other neighbourhoods, gives a particular character to the urban poverty which is an integral part of cities in Bangladesh.

Since independence in 1971, poverty has always been a fundamental concern in the public policy of Bangladesh (Hossain, 2011b; Rashid and Bashar, 2010). Public policy has stressed education and training for the creation of a skilled labour force and for the development of infrastructure. However, these efforts have focused primarily on the issue of rural poverty (Banks et al., 2011a). Despite this focus, evidence suggests that urban poverty is increasing (WB, 2016b). In 2011, the urban population has increased to 42.7 million, with an estimated growth of 4.1 % (Islam et al., 2013), while the urban poor population increased by eight million between 1992 and 2010 (WB, 2016b). The annual growth of the poor population is much higher in urban areas than in rural areas. So rapid urbanisation is likely to continue (see Section 3, Chapter 2).

[6]The second-lowest tier of regional administration in Bangladesh. The administrative structure consists of division, district, *upazila* and union.

[7] However, several attempts by the researcher to access this data have failed.

[8]Informal housing is located in settlements where groups of housing units have been constructed on public land, where the occupants have no legal claim or occupy the land illegally. It might also be defined as housing in an unplanned settlement not in compliance with planning and building regulations (OECD. (1997) Glossary of Environment Statistics. *Studies in Methods.* New York: United Nations.

4.3 Household characteristics

This section discusses the social and economic characteristics of the study households. Based on the primary data, it analyses a range of socio-economic opportunities for, and challenges to, the households structured around the issues of demography, education, income and assets and expenditure. Such data could provide an understanding of the socio-economic position of the urban poor, thereby providing a context for the analysis of social capital.

4.3.1 Household size

According to the survey data, the average household size of the urban poor across the three sampled cities in Bangladesh is four, which is similar to the national average (BBS, 2011b). Around 75% of the households are made up of between three and five people. However, the household size in Chittagong is higher than in the other two cities. Approximately one-third of households there have more than four members, compared with 26-29% in Dhaka and Kushtia.

4.3.2 Age of household head

The average age of the household heads varies across cities and neighbourhoods. Their mean ages are 39, 41 and 42 in Dhaka, Chittagong and Kushtia respectively; these differences are statistically significant[9]. The household heads in Dhaka are younger than in Kushtia and Chittagong, perhaps implying that the urban poor in small cities are comparatively more stable. Alternatively, it might imply that the big cities are more socioeconomically challenging, and only a younger, healthier workforce can survive these challenges.

4.3.3 Household education

3.3.3.1 Household heads

Table 4.1 shows the education levels of the poor household heads in Dhaka, Chittagong and Kushtia. Also included are four other metropolitan cities: Khulna, Rajshahi, Sylhet and Barisal. Two time-point sets of primary data (from 2009 and 2014) on the urban poor

[9] In two sample t-tests with unequal variances, the mean age of the study population in Kushtia is 3.71 (t-value=5) and 2.3 years higher (t-value=2.8) than in Dhaka and Chittagong. The difference between Chittagong and Dhaka is not statistically significant.

could provide information on any change over the five year period in Dhaka, Chittagong and Kushtia. The one point data (from 2009) on Khulna, Rajshahi, Sylhet and Barisal provide information on regional variation in education across all seven cities in Bangladesh.

Table 4.1: The level of education of household heads in poor neighbourhoods (in %)

Education	Dhaka		Chittagong		Kushtia		Khulna	Rajshahi	Sylhet	Barisal
	2009	2014	2009	2014	2009	2014	2009	2009	2009	2009
Illiterate	38	61	50	54	45	53	43	48	49	49
Level I-V	19	22	21	21	35	25	25	22	18	14
Level VI-X	34	12	21	15	17	10	27	26	31	28
HSC& above	9	5	8	11	3	13	4	5	2	9

Sources: InM (2009); InM (2014)

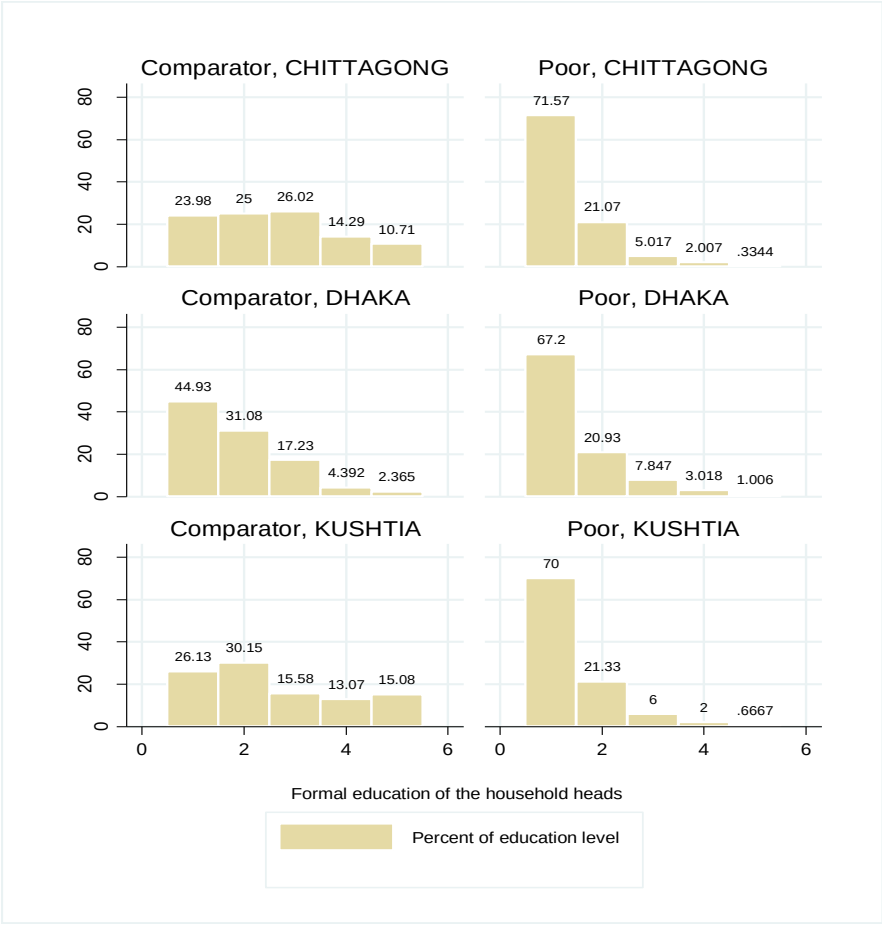
Despite the two sets of data being obtained from two different sets of studies of the urban poor (which contribute to the differences between years. For example in Dhaka illiteracy rose by 23 percentage points; this is a significant difference, and is against expectations based on general societal trends in education levels), the information could provide perspective on the issue. According to our survey in 2014, half of the poor household heads across all three cities were illiterate, which indicates a lower literacy rate among the urban poor compared to the district (including urban and rural) average of those respective cities, particularly of Dhaka and Chittagong. According to the national statistics of 2011, the literacy rates in Dhaka Chittagong and Kushtia were 70.5%, 58.9% and 46.3% respectively (BBS, 2011a). However, the remainder had a primary or high school education which varied across the cities. A small percentage of household heads was found to have higher education such as a higher secondary certificate (HSC) or above. These findings indicate a lower level of education of the urban poor compared with the national average (see BBS, 2010b).

The education levels of the heads of households also varied between two study groups in poor and comparator areas. The proportion of household heads with different levels of education are shown in the bar diagrams[10], where the poor appear to be less educated

[10] The number along the horizontal lines represents the level of education where 1=illiterate and 5= bachelor &above.

compared to the comparator households. According to our survey in 2014, approximately 71% of poor household heads were illiterate, whereas this percentage is lower in comparator areas (see Figure 4.1 below). Moreover, this is much higher than the national average, which is 33.6 % (BBS, 2011b).

The horizontal axis of Figure 4.1 represents the levels of education (higher number means higher level of education; see footnote). The education level is higher in comparator areas in all three study cities. Approximately 19% of the comparator population heads have HSC or higher level education. Variation between the poor and comparator populations is particularly large in Chittagong, yet it is small in Kushtia[11]. Such variation is also evident within the poor areas. The illiteracy rate is 88% in Shantinagar and Chittagong, compared to 46 percent in Korail and Dhaka.



Source: InM (2014)

Figure 4.1: Level of education of the household head

[11]PSU selection bias may make some contribution to this variation.

3.3.3.2 School participation by children

School participation by children aged between five and fifteen represents the potential education attainment of poor households. According to the survey, a quarter of poor children remain out of school or drop out during childhood. The proportion of children attending school is similar to that in the national survey, but it is significantly less than the participation of comparator children, which is 92 % (BBS, 2010a); however, school attendance rates vary across cities. Proportions of children attending school are approximately three-quarters in Dhaka, two-thirds in Chittagong and 80% in Kushtia. Again, participation is higher in comparator areas: 86% in Dhaka, 87% in Chittagong and 92% in Kushtia. A significant proportion of children over the age of ten were found to be engaged in the garment industry and day labour, which gives a clue as to the reasons for dropping out of school.

4.3.4. Household incomes

Household incomes vary across the study cities and groups. According to the survey data, the mean monthly incomes of the poor residents in Dhaka, Chittagong and Kushtia are BDT 11,077 (£110), BDT 10,861 (£108) and BDT 9,332 (£93) respectively. The amount varies little between Dhaka and Chittagong, but does so moderately between Kushtia and the other cities. On the other hand, the mean incomes of the comparator households are BDT 16,816 (£168), BDT 15,897 (£158) and BDT 15,119 (£151) respectively, these figures are significantly higher than those of the poor residents[12].

According to the BBS's Household Income and Expenditure Surveys in 2010 and 2005, the average monthly income of urban households is BDT 16,476 (£164.5) and BDT 10,463 (£104.5) respectively. This means the nominal income increased significantly over the survey period (see Section 2.3 in Chapter 2). If this trend continues, by year 2015 the national average (nominal) household income might be double the income of the urban poor.

[12] This includes 99 % of each of two groups. Household incomes are up to BDT 31,000 for the 'poor' group and up to 65,000 for the 'control' group.

Table 4.2: Mean monthly income of study households (in BDT)

City	Poor Areas		Comparator	
	Mean	Robust	Mean	Robust
Dhaka	11,076	272.63	16,816	1657.10
Chittagong	10,861	533.94	15,897	1330.84
Kushtia	9,331	102.12	15,119	718.43

Source: InM (2014)

Differences of mean incomes among cities and groups are shown in Table 4.3 below[13]. The differences between poor and comparator groups between Dhaka and Chittagong are not statistically significant for either population. However, the difference between Kushtia and the other cities is significant, particularly in the case of the poor areas; the figure varies by BDT 1,745 (£17) between Dhaka and Kushtia, and by BDT 1,529 (£15) between Chittagong and Kushtia, with monthly household income in the poor areas of Kushtia lower than in the other two cities. In the case of the comparator groups, differences in income between cities are not statistically significant, except those between Kushtia and Dhaka. The income of comparator households in Dhaka is BDT 1,697 (£16) higher than the income of those in Kushtia. The differences in the cost of living between Kushtia and Dhaka may be partly explained by people in Kushtia being closer to their rural roots; this will be discussed later.

Table 4.3: Mean monthly income differences between cities (in BDT)

City pair	Poor			Comparator		
	Mean	Std. Err.	t-value	Mean	Std. Err.	t-value
1 Vs 2	-216	354	-0.60	-919	786	-1.17
1 Vs 3	1,745	306	5.70	1697	775	2.19
2 Vs 3	1,529	369	4.14	778	792	0.98

[City: 1=Dhaka; 2=Chittagong and 3= Kushtia]
Source: (InM, 2014)

[13]Two-sample t-tests with unequal variances have been used to test the hypothesis that the mean varies significantly.

These findings suggest that higher income (by approx. one-fifth) opportunities are one of the many reasons for the poor to migrate from the countryside to urban Dhaka and Chittagong. This phenomenon concentrates poverty largely in Dhaka and Chittagong. According to the World Bank's global poverty lines (lower headcount poverty line: $1.90/day; and upper headcount poverty line: $3.10/day), if a five-member household's income is lower than BDT 22,800 it would fall under the lower poverty line. By this measure, both study groups, particularly the 'poor sample', are living far below the lower poverty line.

4.3.5 Land property

More than 90% of the study population has no agricultural land. The remainder own a mean amount of 13.2 decimal[14] of agricultural land. The mean market value of this land is approximately BDT 319,392 (£3,190).

However, asset values vary significantly among poor and comparator areas, specifically in Dhaka and Chittagong. Land owned by the comparator group is worth BDT 529,149 (£5,291) in Dhaka and BDT 897,711 (£8,977) in Chittagong; both values are higher than those of the poor. However, the variation is insignificant in Kushtia. City-wise mean agricultural and homestead land values are presented below in Table 4.4 and 4.5.

Table 4.4: Mean agriculture land-value (in BDT)

City	Poor			Comparator		
	Obs.	Mean	Robust Std. Err.	Obs.	Mean	Robust Std. Err.
Dhaka	44	433,636	75,260	70	962,785	51,079
Chittagong	51	350,883	72,550	53	1,250,000	756,380
Kushtia	8	316,125	102,813	23	1,480,000	399,395

Table 4.5: Mean homestead land-value (in BDT)

city	Poor			Comparator		
	Obs.	Mean	Robust Std. Err.	Obs.	Mean	Robust Std. Err.
Dhaka	197	365,822	80,268	177	1,600,000	724,983
Chittagong	191	302,461	28,202	145	1,210,000	294,772
Kushtia	17	132,059	22,386	127	2,840,000	704,210

Source: InM (2014)

[14]A decimal is a unit of area in Bangladesh approximately equal to 1/100 acre (40.46 m²).

A large portion of the poor do not have homestead land. Only one third of them own some land, but the amount of land that they own is very small. The mean land owned by these households is approximately 6.3 decimal, which might be worth approximately BDT 324,126 (£3,241). Again, homestead-land values vary significantly across cities, but vary less between Dhaka and Chittagong. According to the survey data, the mean land values in Dhaka and Chittagong are BDT 233,764 (£2337) and BDT 170,402 (£1,704), both of which are higher than the land value in Kushtia.

Mean values of homestead land varies significantly between poor and comparator groups across cities. The average value of assets of the comparator groups is BDT 1237,692 (£12,376), BDT 904,119 (£9,041) and BDT 2703,697 (£27,036) in Dhaka, Chittagong and Kushtia respectively; these are much higher than the mean land value of the corresponding poor. Both types of land, including the homesteads, are located in distant home villages, and not in or near the urban neighbourhood. Thus they cannot be used to generate income in kind, for example from food production, although there might be some rent.

4.3.6 Other assets of poor households

The landless urban poor also own very few other assets. A minimal number own some cashable assets like computers, fridge, ornaments and rickshaws. Most of these consist of cheap necessary bicycles, sewing or other small machines, furniture, televisions and mobile phones. Responses about asset ownership and market values are presented in table 4.6.

Table 4.6: Mean asset-values (in BDT) of the poor and comparator households

Assets	Poor			Comparator		
	Obs.	Mean	Robust Std. Err.	Obs.	Mean	Robust Std. Err.
Rickshaw	97	23,848	10,554	30	65,083	28,063
Cycle	115	6,852	1,718	113	22,049	1,875
Small machinery	383	3,059	438	336	6,556	1,533
Furniture	979	8,019	1,094	676	36,503	6,578
TV	614	5,788	270	585	9,400	659
Computer	9	22,669	4,278	91	25,280	937
Mobile	918	2,138	142	652	5,727	742
Ornament	528	9,767	1,891	471	31,453	5,246
Refrigerator	90	19,159	1,702	303	22,251	1,205

Assets	Poor			Comparator		
	Obs.	Mean	Robust Std. Err.	Obs.	Mean	Robust Std. Err.
Others	572	3,703	847	411	8,344	2,979
Total Obs.	1,100			700		

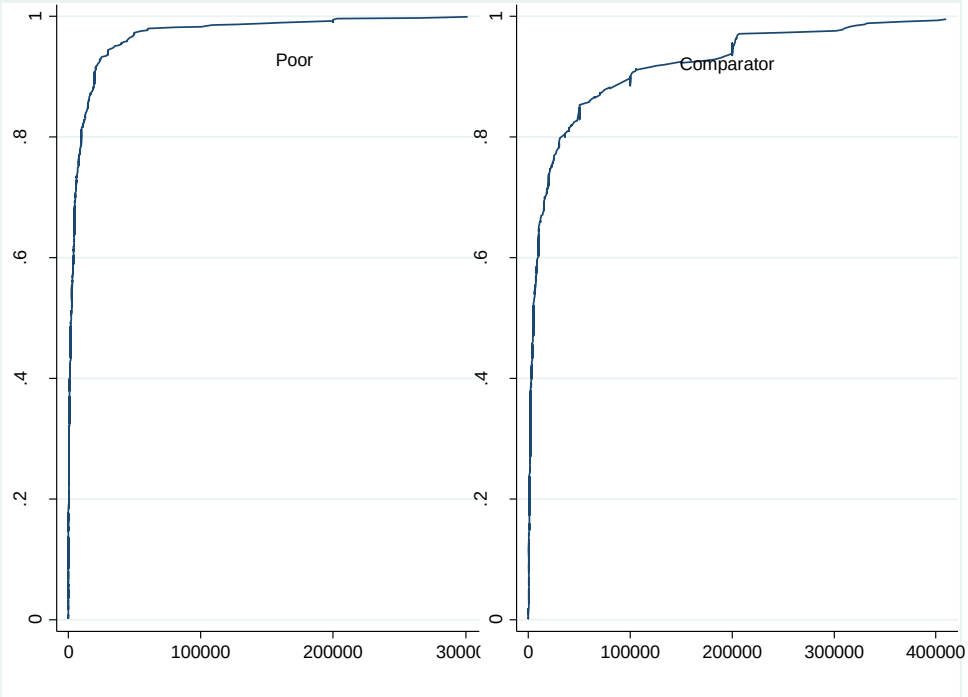
Source: (InM, 2014)

Of the 1,100 poor area households sampled, the number holding a particular asset is shown against the corresponding observation in column 2 (from the left). Column three represents the mean market values of the assets, based on the household's responses. The most commonly owned assets of the urban poor are wooden furniture, mobile phones and televisions.

A higher proportion of the comparator households possess many of these assets. For instance, 84% of the comparator population own a television set whereas only 56% of poor households do. 43% of comparator households have a refrigerator compared to only 8% of poor households. The mean value of a particular asset is also higher in comparator households when compared to the poor households.

4.3.7 Savings of the poor households

A significant proportion of the study population was found to have savings; totals ranged from a tiny amount of cash in hand to BDT 1,000,000 (£10,000). Half of the savings amount to between BDT 500 (£5) and 500,000 (£5,000). Figure 4.4 shows the cumulative percentages of total savings in poor and comparator samples.



Source: (InM, 2014)

Figure 4.2: Cumulative savings of households

The line showing the poor samples rises sharply on the small amount of savings. This means that 90% of the savings are less than BDT 60,000 (£600). On the other hand, the comparator households' line rises comparatively slowly. This means that a higher proportion of the comparator group has higher savings: more than 20% of the comparator households' savings are greater than BDT 60,000. The mean household savings of both groups are shown in table 4.7 below.

Table 4.7: Total savings of households (in BDT)

City	Poor				Comparator			
	Mean	Std. Err.	[95% conf. Interval]		Mean	Std. Err.	[95% conf. Interval]	
Dhaka	2,470	263	1954	2985	17,447	3040	11477	23417
Chittagong	2,719	337	2059	3380	12,149	2708	6832	17467
Kushtia	7,241	586	6091	8392	34,384	5217	24141	44627
N	*1073*				*686*			

Source: InM (2014)

Household savings in poor areas are significantly lower than in the comparator areas. The mean savings of the households in poor areas in Kushtia is higher than those in Dhaka and Chittagong. This difference is statistically significant[15]. According to estimates, the mean savings of poor households in Dhaka, Chittagong and Kushtia are BDT 2,470 (£24), BDT 2,719 (£27) and BDT 7,241 (£72) respectively. Also, the savings of the comparator households in Kushtia are significantly higher than in the other two cities. Incomes are lower but savings are higher in Kushtia, which implies that large cities offer higher income earning opportunities but are more risky or have higher living costs. Table 4.8 shows the savings of poor households with different entities.

Table 4.8: Mean savings of the poor households (in BDT)

Entities	Obs.	Mean	Robust Std. Err.	Std. Dev.	95% Conf. Interval	
MFI	241	4,625	334	4304	4166.84	5083.73
Cooperative	67	8,269	1086	7880	6346.53	10190.78
Relative	73	35,288	5925	44657	24868.44	45706.91
Neighbour	31	7,377	1442	6874	4856.00	9898.84
Friend	18	12,511	3301	16938	4088.21	20934.01
Bank	246	59,255	8299	97412	47022.06	71488.71
Cash	951	1,376	116	1856	1258.18	1494.47
others	43	22,674	5818	32367	12713.36	32635.48

Source: InM (2014)

A significant proportion of the poor has been found to have savings with the Microfinance Institutions (MFIs) and the banks. However, the role of MFI's does not seem to be great. Along with the formal and non-formal financial institutions (banks and MFIs), the poor are found to save with relatives, neighbours and friends. Beyond the financial institutions, the relative is more important than others, with a higher number of the poor reportedly saving larger amounts of money with their relatives. Approximately 34% of the respondents reportedly saved with the banks or MFIs.

4.3.8 Household expenditure

Table 4.9 represents the major expenditures of the households in the study areas. According to the estimates, a significant portion of household income is spent on food

[15]In two-sample t-test with unequal variance

and housing. In addition, a considerable amount of incidental expenditure is incurred from a number of other sources, such as medical treatment, marriage and other cultural obligations. However, food, incidental and other apparently necessary or minimal expenditures vary little between poor and comparator. This kind of necessary expenditure may squeeze housing and education expenditures. People in poor areas spend about half on housing and almost one-third on education compared to comparator households. It is supposed that the poor live in slums and informal housing to save expenditure.

Table 4.9: Monthly expenditure of tenant households (in BDT)

[£1= BDT 100 (Approx.)]

Field of expenditure	Poor		Comparator	
	Mean	Std. Err.	Mean	Std. Err.
Food	5,775	188	7,547	243
Rent	2,050	59	3,946	135
Education	467	38	1,510	105
Electricity	124	24	244	25
Water	38	5	66	24
Gas	71	9	119	25
Transport	331	20	539	36
Medical	485	30	689	40
Mobile	244	10	473	31
Garment	384	13	628	45
Incidental (yearly)	5,540	1,179	6,639	1,367
Total expenditure	16,696	1,230	23,741	1,542
Obs.	*594*		*411*	

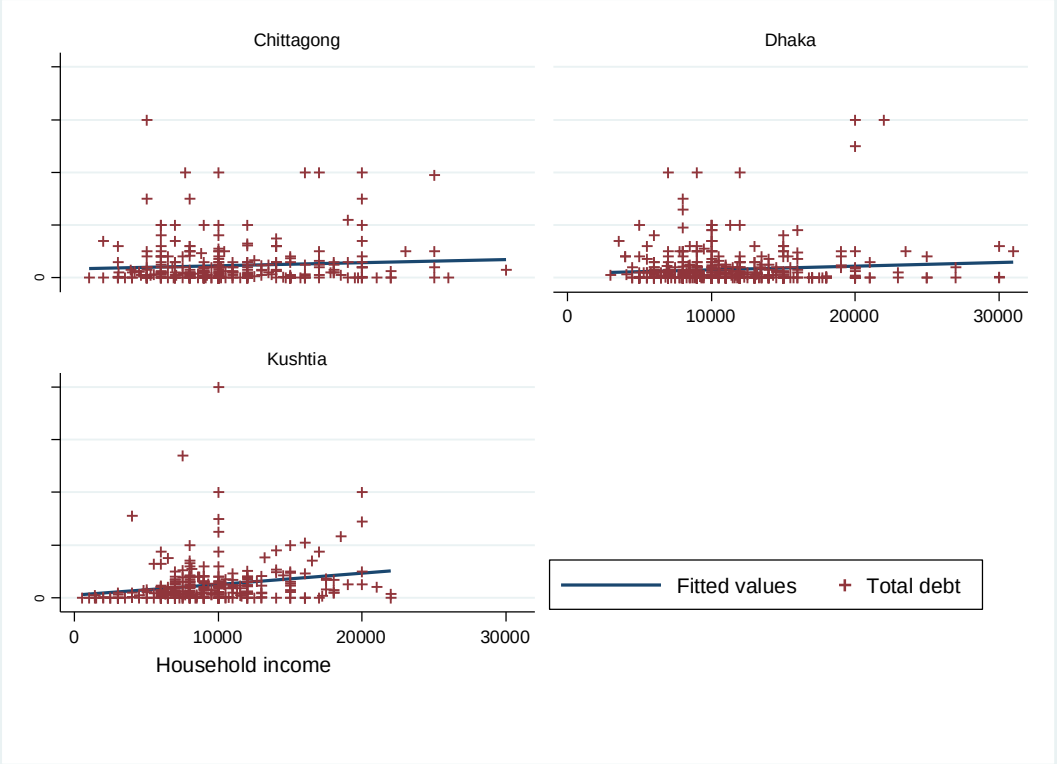
Source: InM (2014)

The average monthly food expenditure of the poor and comparators are BDT 5,775 (approx. £57.50) and BDT 7,547 (£75), while housing-related expenditures are approximately BDT 2,300 and BDT 4,500, respectively. The small difference in food expenditure but big difference in housing expenditure could suggest that since the poor cannot compromise on the necessity for food, they can compromise on housing and education. The difference of expenditures on housing and education varies significantly; these being BDT 1,836 (£18) and BDT 987 (£10) respectively.

The income levels of the poor suggest that they cannot afford proper housing after they have met other needs such as food and healthcare. It may be truer to say that a small increment in income is unlikely to change their housing situation. It is conventional in economics to assume that the poor maximise utility under income constraints; this means that a rise in income may not affect their expenditure on housing and education. In such situations, the marginal utility of per unit expenditure on housing or education is less than that of other necessary expenditure.

4.3.9 Households' debt

Approximately 59% of the poor households have debt. This can be as small as BDT 150, rising to BDT 2,000,000 (£20,000). The scatter diagrams below represent poor households' debt in three cities. According to the diagram, the lower income households, with a monthly household income BDT 20,000 or less, are more likely to have taken a higher loan.



Source: InM (2014)

Figure 4.3: Household current debt

Table 4.10 represents the estimated mean debt of the poor and comparator households across cities. According to estimates, the mean debts of the poor households are approximately BDT 26,824 (£268) in Dhaka, BDT 25,883 (£258) in Chittagong and BDT 29,423 (£294) in Kushtia. The mean debt of comparator households is higher than in the poor households, with the exception of Kushtia, where the mean debt of comparators is less than that of their poor counterparts.

Table 4.10: Households' debt in three cities (in BDT)

City	Poor		Comparator	
	Mean	Robust	Mean	Robust
Dhaka	26,824	5,736	45,539	4,794
Chittagong	25,883	1,563	33,268	1,513
Kushtia	29,423	2,351	23,029	6,68

Source: InM (2014)

In general, higher incomes could support higher debt; however, the poor are more vulnerable and have a greater need to resort to debt to get through crises. There is generally a relationship between debt, particularly informal and problem debt, and poverty. The difference of debt between poor and comparator groups is not significant in Dhaka or Kushtia. However, it is significant in Chittagong, where the mean debt of the comparator households is approximately BDT 10,495 (£104) greater than that of the poor group.

4.4 Neighbourhood characteristics

This section examines the neighbourhood characteristics in the study areas, such as land ownership, tenancy patterns, availability of facilities and the cost of living. These variables are important to the poor, because different characteristics offer different social opportunities and challenges.

4.4.1 Land ownership of neighbourhoods

Land ownership of the poor neighbourhoods is largely public, but there are cases in which settlements are built on both public land and the adjoining private land.[16] Moreover, some poor neighbourhoods are built on private land.

4.4.1.1 Dhaka

Land ownership of neighbourhoods in Dhaka is mixed. This means the neighbourhood of a particular type of land is extended to surrounding land of other types. Among four categories of land ownership (see the questionnaire in Appendix A), approximately 44% is public, 32% private, and 20% '*khash*'.

Khash land, for example 'Bawnia', refers provisional government-allotted land to the poor via a rehabilitation project. Over the years, neighbourhoods have extended to surrounding private and *khash* land. So there is no clear demarcation between the provisionally allocated land and the extension, but the combined area is known as Bawnia.

Similar mixed land ownership patterns are found in other neighbourhoods. In Arambagh, 52% of the land is public, 22% is private and 26% is *khash.* In Hazaribagh, 80% of the land is private, 16% is *khash* and the remainder is mixed. In Porabari, 18% of the land is public, 76% is private and there is some mixed land. In Korail, the land is primarily public, yet 7% is reported to be private. Looking at major shares of land ownership, neighbourhoods can be sorted depending on whether land ownership is public, private or *khash*.

4.4.1.2 Chittagong

According to survey statistics, land ownership of Jamtoli is public. On the other hand, the land ownership of the Shantinagar slums neighbourhood is private. Similarly to earlier discussions, although the land ownership of Shantinagar is recorded as private, approximately 30% of land is reportedly public or *khash*.

[16]Respondents were asked about the land ownership of their houses, and were given four answer options: government, private, *khash,* 'no idea'.

4.4.1.3 Kushtia

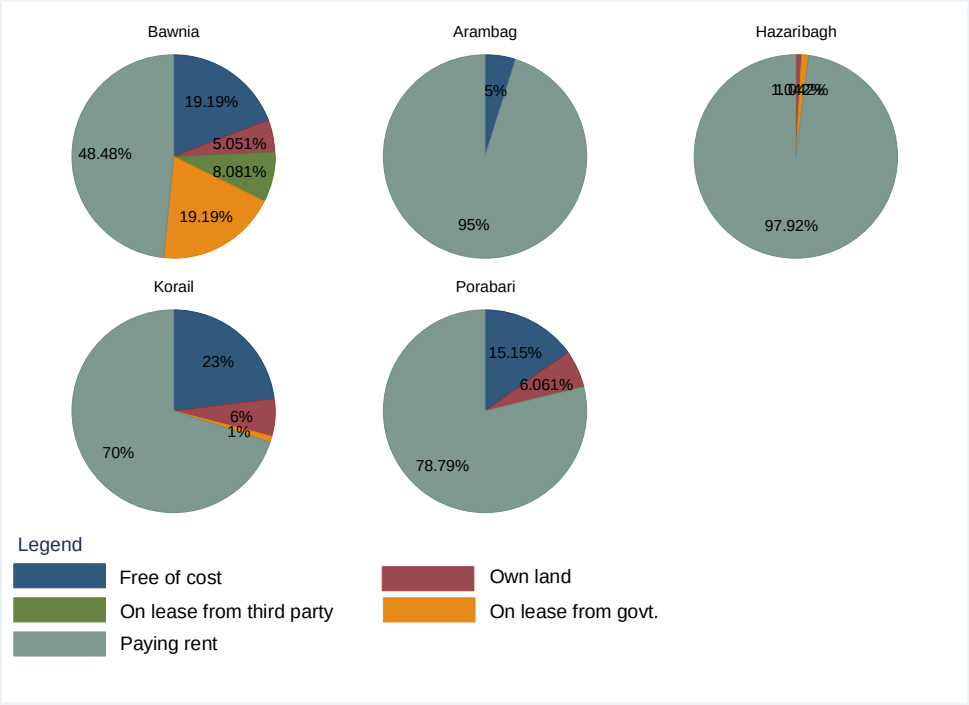
Three-quarters of land ownership in Chror Amlapara is reportedly *khash*. The neighbourhood is primarily built by the banks of the river Gorai, where land title is open; the remainder is reportedly private. Land ownership of the 'Housing Society' neighbourhood, which was developed alongside the national highway, is *khash*.[17] Conversely, similar proportions of land ownership in Chor Thanapara are reportedly private.

In general, the survey data conveys a more complex picture. Land ownership of poor neighbourhoods in cities is primarily public, with the land owned by various government bodies, while many residents are paying rent to the illegal occupiers who control those lands. However, there is a lot of informal housing scattered over private neighbourhoods. This, in turn, has implications for potential housing upgrading, which is discussed in Chapter 8.

4.4.2 The status of tenancy

The following diagrams are based on responses to the question: *How they are living in the house?* In the case of Dhaka, householders are largely tenants, whether land ownership is public, private or *khash*. For instance, though the land in Korail is owned by a public organisation (T&T, the state-owned telecommunication department), 70% of residents are tenants paying rent. Similarly, 78% of land ownership in Arambagh is either public or *khash*; yet the survey reveals that 95% of its residents are paying rent to primary or *de facto* owners.

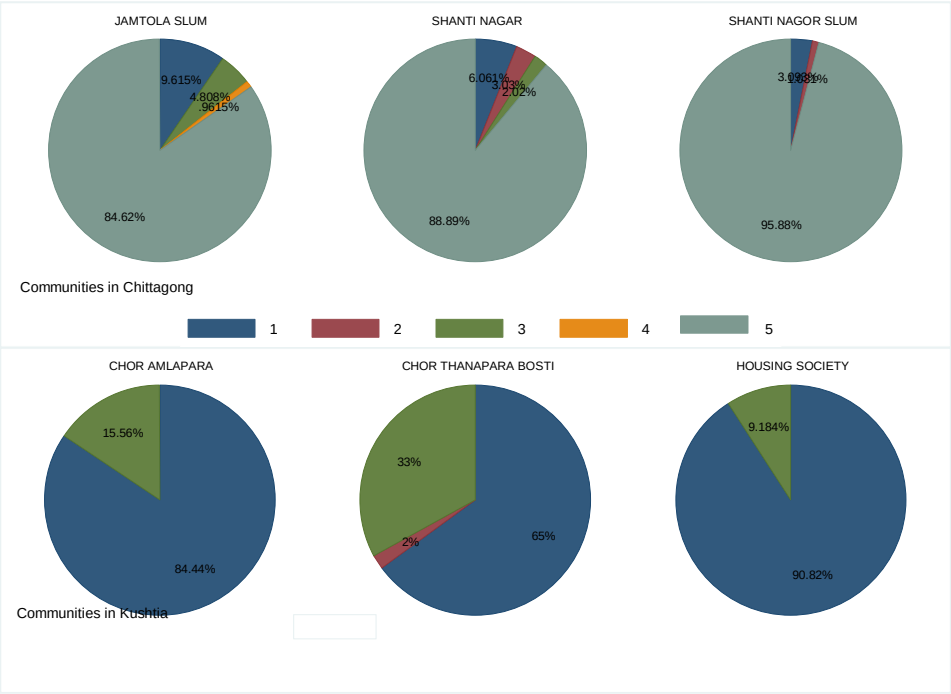
[17]Adjacent to the other side of the'Housing Society' is another neighbourhood, where land is allocated by the government specially to house people with lower middle incomes. Spatial boundaries between the two neighbourhoods are not distinguishable; however, social boundaries are clearly marked by land ownership and housing patterns.



Source: InM (2014)

Figure 4.4: Status of housing occupancy in Dhaka

Also, a large portion of the poor surveyed in Chittagong is paying rent for dwellings erected on public land. Land ownership in the Jamtoli slum is largely public; however, 85% of the residents pay rent. Details of the different types of occupancy in Chittagong and Kushtia are shown in figure 4.7 below.



Source: InM (2014)

Figure 4.5: Status of housing occupancy in Chittagong and Kushtia

A small percentage of the poor in Kushtia is paying rent in comparison to those in Dhaka and Chittagong: 16% in Chor Amlapara and 9% in the Housing Society. This percentage is higher in Chor Thanapara, where one-third of the neighbourhood's residents are paying rent even though a large portion of the land is private.

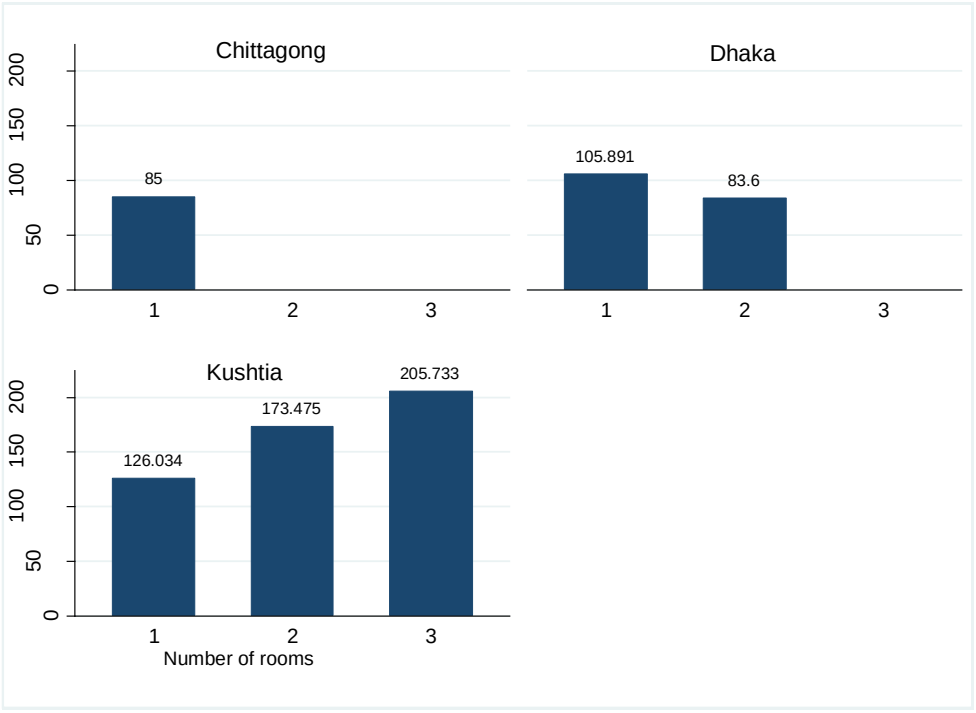
The interview went on to ask: *Who collects the rent?* particularly of those living on public or *khash* land. According to the survey data, approximately 83% households in Chittagong and 43% of households in Dhaka reported that they pay rent to a third party. This third party is allegedly a particular group linked to a political group, which has taken control of public land and leases it out for informal housing.

Corruption in controlling public land is higher in Dhaka and Chittagong than in Kushtia. This might imply that controlling public land in big cities provides higher rent because of higher demand for informal housing.

4.4.3 Size of housing units

The study neighbourhoods are crowded compared to other city neighbourhoods; most of the households in Dhaka and Chittagong live in single-room homes. According to the survey, 88% of homes in the poor neighbourhoods of Dhaka are single-room dwellings; in Chittagong the proportion is 79%. The rest of the households live in either two- or three-room housing. Usually a unit is comprised of a room and small courtyard space that is almost as useful for cooking, washing, socializing etc.

In contrast, housing units in Kushtia are large in terms of room size and the number of rooms used. According to the statistics, approximately half of the households live in two- or three-room housing, and the average room size is slightly larger than the rooms in Dhaka and Chittagong. The diagrams below represent the mean room size of single-room housing, two-room housing and three-room housing in the study neighbourhoods.



Source: (InM, 2014)

Figure 4.6: Mean size of housing unit (sq. feet)

Single-room homes can be as small as 85 square feet in Chittagong; this is smaller than single-room housing in Dhaka. However, the average room size of two-room housing in Dhaka is smaller, at approximately 84 square feet. Compared to room sizes in Dhaka and Chittagong, the mean room size of the urban poor neighbourhoods in Kushtia is larger in both one-room and two-room homes. Given the average household size of four, living conditions among the poor are far below minimum standard levels.

4.4.4 Costs of living

4.4.3.1 House rent

The ratios of rent-paying households in the poor areas of Dhaka and Chittagong are much higher than the ratio found in Kushtia. Approximately 75% of Dhaka's study population are tenants; the proportion is even higher, at 86%, in Chittagong. In contrast, only 20% of households in Kushtia are reportedly tenants. Moreover, the mean rent in Dhaka and Chittagong is much higher than that in Kushtia. Table 4.11 below represents the mean rents in Dhaka, Chittagong and Kushtia.

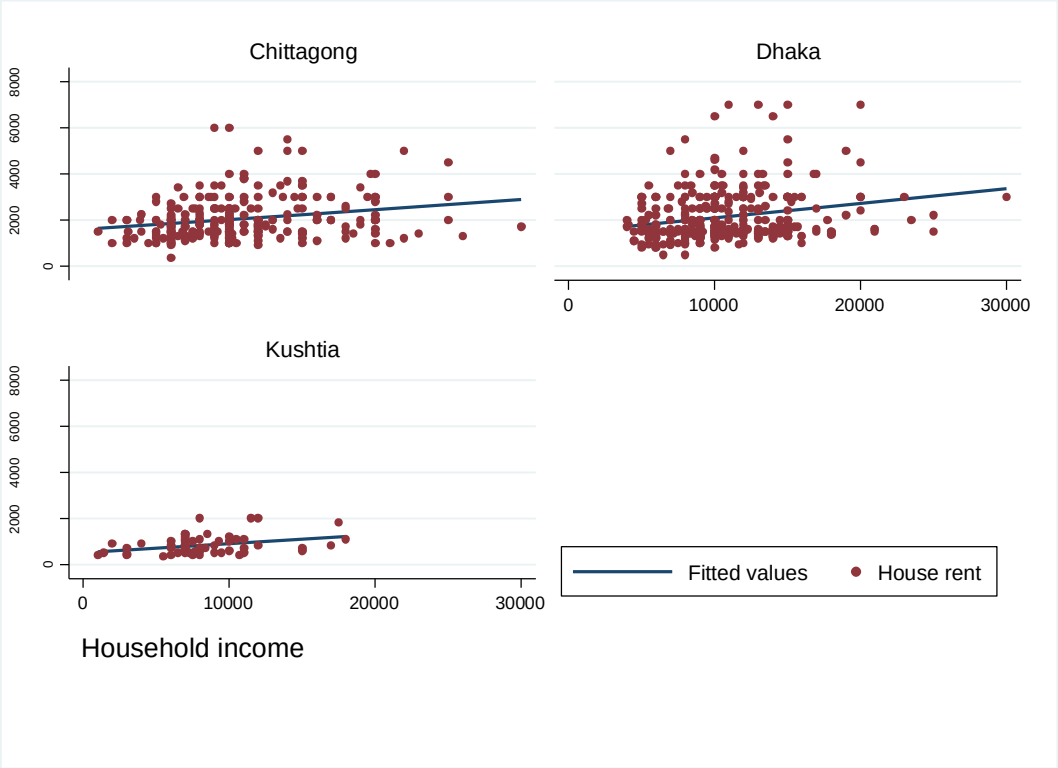
Table 4.11: Mean rent in poor neighbourhoods (per month in BDT)

City	Poor				Comparator			
	Mean	Std. Err.	[95% Conf. Interval]		Mean	Std. Err.	[95% Conf. Interval]	
Dhaka	2,042	43	1957	2126	3,165	53	3060	3270
Chittagong	1,972	46	1882	2064	2,726	111	2507	2944
Kushtia	867	56	757	976	2,009	145	1725	2294
N	*694*				*364*			

Source: InM (2014)

The mean rent paid by tenants varies across the three study cities. According to the survey responses, mean rents in poor areas in Dhaka and Chittagong are BDT 2,042 (£20) and BDT 2,017 per month respectively. However, the mean rent in Kushtia is BDT 867 (£8.50), with rents varying widely between BDT 350 and BDT 2,000. On the other hand, mean rents in comparator areas are higher than in the respective poor areas in all of the study cities.

The scatter diagrams below (figure 4.7) show the distribution of rents in the poor areas of three cities against the household income. According to the figure 4.7, the proportion of tenants in Dhaka and Chittagong are high compared to those in Kushtia. Thus, the intensity of distribution is higher in Dhaka and Chittagong than in Kushtia. Though the lines of figures display little upward movement in rents with the increase in income, most of the rents are limited to within a certain amount. This might mean that the poor may not necessarily spend their increased incomes on renting better accommodation.



Source: (InM, 2014)

Figure 4.7: Monthly rent paid by the study household

The difference in mean rents between Chittagong and Dhaka is not statistically significant, though those of both cities differ significantly from that of Kushtia. The mean rent in Chittagong is BDT 1,225 (£12) higher than in Kushtia, and the mean rent in Dhaka is BDT 1,321 (£13) higher.

4.4.3.2 Expenditure on electricity

A significant proportion of households – three-quarters in Dhaka and half in Chittagong – were found not to report on electricity expenditure. However, the non-response rate in Kushtia was only 17%. Mean electricity expenditures by city, according to the survey responses, are shown in Table 4.12 below.

Table 4.12: Mean expenditures on electricity (monthly, in BDT)

City	Poor*				Comparator*			
	Mean	Std. Err.	[95% Conf. Interval]		Mean	Std. Err.	[95% Conf. Interval]	
Dhaka	419	18.08	383.01	624.85	750	44.92	661.62	338.38

Chittagong	270	12.61	244.77	294.33	535	30.35	475.38	594.81
Kushtia	353	10.68	332.02	374.02	667	24.03	609.27	703.84
N			*460*				*306*	

[*The estimates are based on the lower 90% of households who are paying for electricity.]
Source: InM (2014)

Mean electricity expenditure in Dhaka is the highest of the three study cities, followed by Kushtia and Chittagong. According to the survey responses, the means are respectively BDT 419 (£4), BDT 353 and BDT 270. It seems a little surprising that the mean expenditure in Kushtia is higher than in Chittagong. Such a finding may substantiate the literature that many informal housing areas and slums throughout the big cities in Bangladesh are unlawfully connected with urban services. However, the mean electricity expenditure in comparator areas is higher than the corresponding poor areas, suggesting the former are more able and willing to pay for a legal electricity supply than the latter.

4.4.3.3 Expenditure on water supply

Though a water supply is an essential service for urban dwellers, most of the urban poor remain without it. As such, many of those households have to resort to other means to access water. According to the survey responses, approximately 22% of poor households in Dhaka and 40% of those in Chittagong pay for water. However, there is no municipal water supply connected to the poor neighbourhoods in Kushtia, and households are mostly using tube-well water. Table 4.13 represents the comparative mean expenditure on water in Dhaka and Chittagong.

Table 4.13: Expenditure on water (monthly, in BDT)

City	Poor				Comparator			
	Mean	Std. Err.	[95% Conf. Interval]		Mean	Std. Err.	[95% Conf. Interval]	
Dhaka	252	26.22	200.99	304.32	817	204.03	413.42	1219.91
Chittagong	220	15.29	190.00	250.25	212	17.73	175.96	247.04
Kushtia	*Usually use tube-well water*				147	15.32	116.39	176.94
N			*231*				*147*	

Source: InM (2014)

Households in poor neighbourhoods of Dhaka and Chittagong mostly use the nearest water-point to collect water. They either pay for each full water container, or they pay monthly. Some of the poor households reportedly pay for water along with the rent. It may be that some of the poor households pay their bills through the informal rents. According to our survey, the mean expenditure on water in the poor areas of Dhaka and Chittagong is BDT 252 (£2.50) and BDT 220. However, the difference in means between these two cities is not statistically significant.

4.4.3.4 Expenditure on cooking gas

There are no gas facilities in most of the urban poor neighbourhoods in Dhaka and Chittagong. Approximately one-fifth of poor households in each of these cities have been found to use gas for cooking. They either buy a gas cylinder or have a connection to a gas supply line. The mean expenditure on gas of the study poor in Dhaka and Chittagong is shown in table 4.14 below.

Table 4.14: Expenditure on gas (monthly, in BDT)

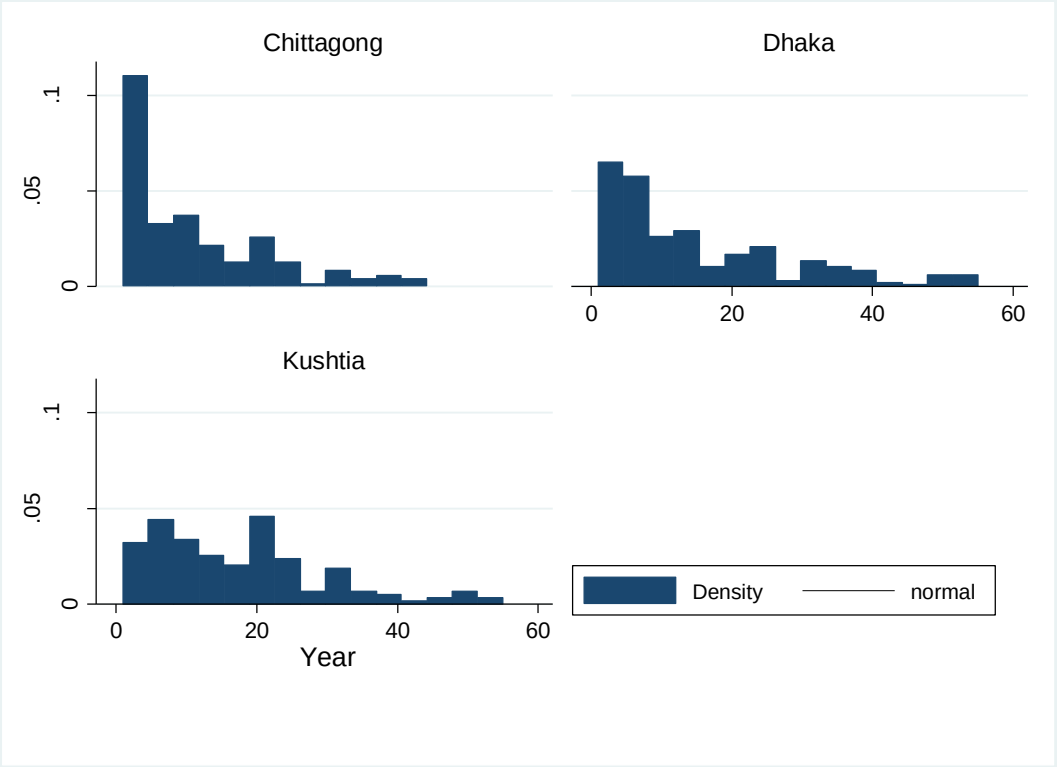
City	Poor				Comparator			
	Mean	Std. Err.	[95% Interval]	Conf.	Mean	Std. Err.	[95% Interval]	Conf.
Dhaka	714	82.96	549.5	878.3	834	170.05	497.19	1169.9
Chittagong	509	50.61	407.7	610.2	503	37.08	430.27	576.9
Kushtia	*Gas line not available*							
N	*184*				*132*			

Source: InM (2014)

According to the responses, the mean expenditures on gas in Dhaka and Chittagong are approximately BDT 714 and BDT 509 respectively. At a 95% level of confidence, they vary between BDT 549 and BDT 878 in Dhaka, and between BDT 408 and BDT 610 in Chittagong. Though the mean expenditure of comparator households is higher in Dhaka, it does not vary in Chittagong.

4.4.3.5 Expenditure on healthcare

The mean household expenditure on healthcare, at BDT 327, is lowest in Kushtia; the mean expenditure in Chittagong is BDT 779, and is BDT 525 in Dhaka. The scatter plots below represent the healthcare expenditure of the poor populations in the three study cities.



Source: InM (2014)

Figure 4.8: Healthcare expenditure of the study households

Healthcare expenditure is expected to be very variable according to whether people are sick or well. However, a significant difference is evident between cities. According to estimates, the expenditure in Chittagong is BDT 452 (£4.50), which is 254 (£2.50) higher than in both Kushtia and Dhaka. Healthcare expenditure in Dhaka is approximately BDT 198 (£2) higher than in Kushtia. This difference is not significant, but it may hint that large cities like Chittagong and Dhaka inflict higher healthcare expenditure on their residents. Mean healthcare expenditures of comparator households is also highest in Chittagong and Dhaka, as shown in Table 4.15 below.

Table 4.15: Healthcare Expenditure of the 'comparator' households (monthly, in BDT)

City	Mean	Std. Err.	[95% Conf. Interval]	
Dhaka	760	48.96	664.26	856.53
Chittagong	1,023	79.05	867.79	1178.23
Kushtia	818	136.65	549.48	1086.09

Source: InM (2014)

According to the survey statistics, healthcare expenditure is highest among the comparators in Chittagong, followed by Kushtia, and the lowest expenditure is in Dhaka.

4.4.5 Social opportunities

The survey conducted for this study did not collect data related to social opportunities available in the poor areas. However, previous data on poor neighbourhoods might provide a glimpse into the available social opportunities (see Table 4.16). Evidence and observation suggest that basic social opportunities such as primary schooling, healthcare centres, play areas and playing fields, mosques and garbage disposal points are completely inadequate in urban poor neighbourhoods.

Table 4.16: Social opportunities in low-income neighbourhoods in Dhaka

Type of facilities	Availability (%)	
	1983	1988
Primary school	5.8	5.7
Healthcare center	0.8	3.4
Open Space for children	13.6	10.2
Mosque	13.9	10.3
Garbage disposal facility	-	8.6

Source: CUS (1983); CUS (1988)

According to the 1988 study, only 5.7% and 3.4% of the poor in Dhaka had access to primary schooling and primary healthcare respectively. These social opportunities have improved little over the years. Access to primary healthcare improved from 0.8% to 3.4%, presumably because of the active presence of NGOs in the country. A number of NGOs and voluntary organisations are working in the poor neighbourhoods to provide primary education and healthcare facilities, but those efforts are inadequate. The availability of

other facilities, such as open spaces, decreased between 1983 and 1988. This probably implies that the poor neighbourhoods are gradually expanding to fill such spaces.

Urban poor neighbourhoods largely lack necessary access roads. According to the statistics of 1988, more than half of these neighbourhoods had no access road, while 31% had only narrow earthen walkways. Only 17% had moderate levels of access roads to their houses.

Table 4.17: Road and drainage facilities in Dhaka

Road availability	%
No roads	51.3
Earthen narrow lanes	31.3
Herring road (made of brick layer) (<4ft)	7.5
Herring road (>4ft)	1.8
Paved road	8.1
Drainage Condition	**Percentage**
Good	34.8
Exist but poor in condition	43.1
Does not exist	22.1

Source: CUS (1988)

As with access roads, the overall drainage conditions in poor neighbourhoods are poor or very poor. Only one-third of neighbourhoods were found to be properly connected to the city's drainage. The remainder are either connected poorly or not at all.

4.5 Migration of the urban poor

The respondents living in the poor areas are mostly rural migrants who have moved to cities at some point. Very few of them have lived for generation after generation in these urban locations. This section discusses four aspects of migration of the urban poor: origin of migration, frequency of migration, reasons for migration and costs of migration.

4.5.1 Origin of migration

Dhaka alone accommodates 55% of the total urban poor of Bangladesh; therefore, much of the study was conducted there (CUS, 2006). According to CUS and InM data, the major districts of origin of the migrant poor to Dhaka have been as presented in table 4.18. Those studies collected the origin of migration of the urban poor living in informal settlements across Dhaka in different years. According the data, five districts out of 64 districts in the country contribute much to Dhaka's poor population.

Table 4.18: Percentage of Dhaka's poor by major districts of origin

District of Origin	Dhaka (in %)				
	1974	1979	1988	1996	2009
Dhaka	27	20	16	8	24
Faridpur	31	21	21	18	6
Comilla	17	15	15	10	5
Barisal	11	19	23	23	9
Mymensingh	7	7	5	6	5
Noakhali	4	3	7	3	1
Others All	3	15	14	32	51

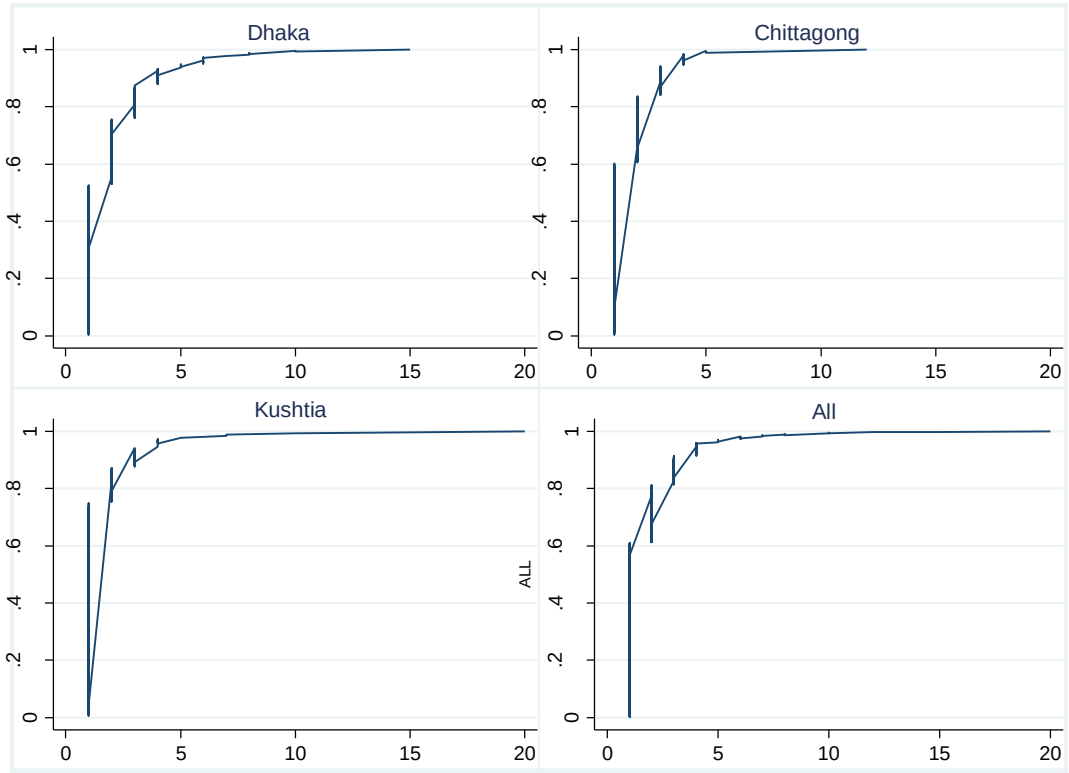
Sources: CUS (1974),CUS (1979),CUS (1988), CUS (1996);(InM, 2009)

According to the statistics, intra-urban migration in Dhaka gradually decreased until 1996. However, according to the survey in 2009, the intra-city migration in fifteen poor neighbourhoods was still found to be high. Approximately a quarter of poor households are found to be moving around within the city.

The poor primarily originated from Faridpur, Comilla and Barisal. The percentage share of immigrants from these districts is always higher than from any other districts of the country. Comilla is very closer to Dhaka and is an economically advanced district, but other two districts are not economically advanced and affected to a greater or lesser degree by floods or cyclones. Together these three contributed between 50% and 60% of the migrants, followed by Mymensingh and Noakhali (close to Dhaka and economically poor), which have also contributed a significant portion of Dhaka's poor migrants. Since communication between Dhaka and other districts has improved over the time, the migration rates (as a percentage of total migrants) from other districts have gradually increased.

4.5.2 Frequency of migration

According to the survey, a significant proportion of the study poor stay in a neighbourhood for longer periods of time. However, the proportion that stays varies across the three cities: 45% in Dhaka have stayed more than 20 years, 31% in Chittagong, and 38% in Kushtia; these people have not migrated or moved out in the last twenty years. The remainder were found to have migrated between one and three times during this period. The following diagrams show the cumulative frequency distributions of numbers of migrations in the three study cities.



Source: InM (2014)

Figure 4.9: Cumulative distribution of household by the number of migrations

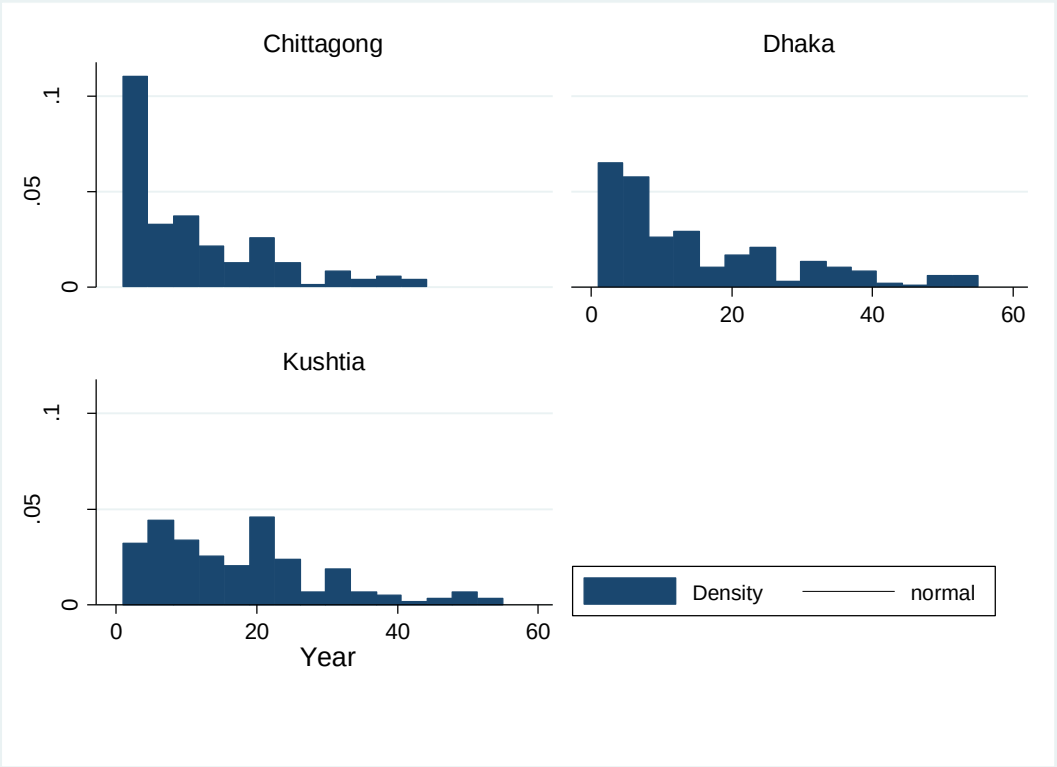
Approximately 61% of the poor migrated just once, and a further 20% and 10% respectively migrated twice or three times during this period. The remaining 9% were found to migrate more than three times. The frequency of migration in Dhaka is higher than either of Chittagong and Kushtia. Approximately 80% of households in poor areas are found to migrate up to three times within the twenty-year period. This percentage is lower in Chittagong and Kushtia.

Table 4.19: The mean stay period (in years) of households in poor areas

City	Obs.	Mean	Std.Err.	[95% Conf.	Interval]
All	1796	14.3	0.290	13.7347	14.8722
Dhaka	797	12.6	0.396	11.8381	13.3940
Chittagong	499	12.8	0.544	11.7634	13.8999
Kushtia	499	18.5	0.587	17.3390	19.6471

Source: InM (2014)

The data reveal that the mean stay period of households in poor areas is 14.3 years, which is not significantly different from the mean stay period of the poor households in Chittagong. However, both significantly differ from Kushtia. The stay period in previous neighbourhoods are shown in the histograms below.



Source: (InM, 2014)

Figure 4.10: Stay period of the study households in previous neighbourhoods

The histograms represent the distribution of the stay period in previous neighbourhoods[18]. The frequencies for Kushtia are more skewed right than for either Dhaka or Chittagong. This means that a large proportion of the households in the poor areas of Chittagong stayed in previous neighbourhoods for only a very short time. Again, frequency of stay period in Dhaka is skewed slightly more to the right than in Kushtia, indicating the poor are less transient in a small town.

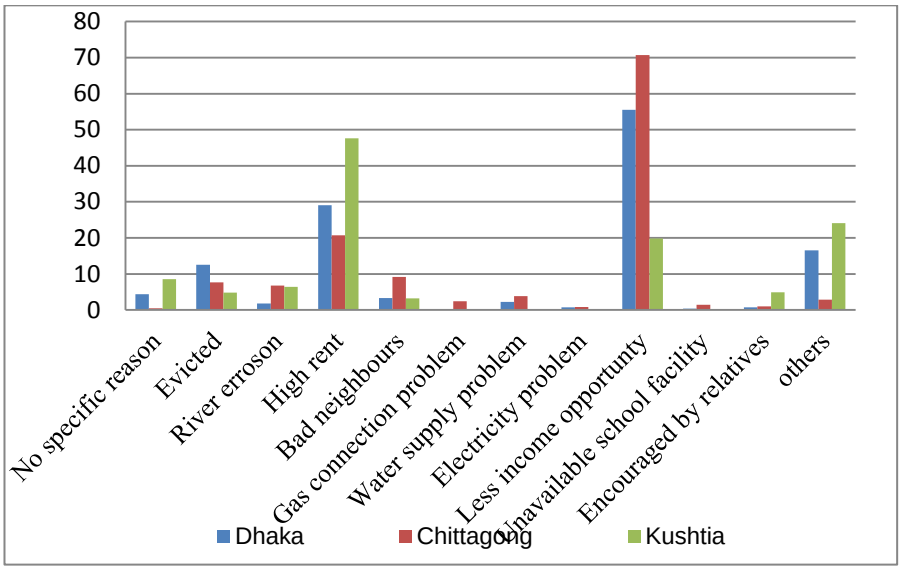
4.5.3 Reasons for migration

There are two main types of migration happening in cities: (i) intra-city migration; and (ii) inter-district migration. The latter type is when migrants move to a city from other districts, maybe from a rural area or smaller city. Most inter-district migration takes place into large cities, notably Dhaka and Chittagong.

The reasons for migration vary across the study population. According to the 2009 InM survey, approximately half of poor households reportedly moved to Dhaka for better income opportunities. Similar evidence is found in the case of Kushtia. Other reasons causing migrants to move away from their original locations in Bangladesh are higher rents, river erosion and eviction from the land. Approximately 14% of poor households in Dhaka reportedly lost their land, and another 3% were evicted from their previous living place.

According to this survey, income opportunity still remains the main reason of migration, particularly for the poor in Dhaka and Chittagong. Other reasons given are bad neighbours, unavailability of urban services (e.g. water and electricity), and lack of school facilities. The percentage shares of various factors contributing to migration in the three study cities are shown in the diagram below.

[18] 99% of the stay periods, ranging from 1 to 55 years of stay at the previous location, have been taken into consideration. The remaining 1% have been treated as outliers.



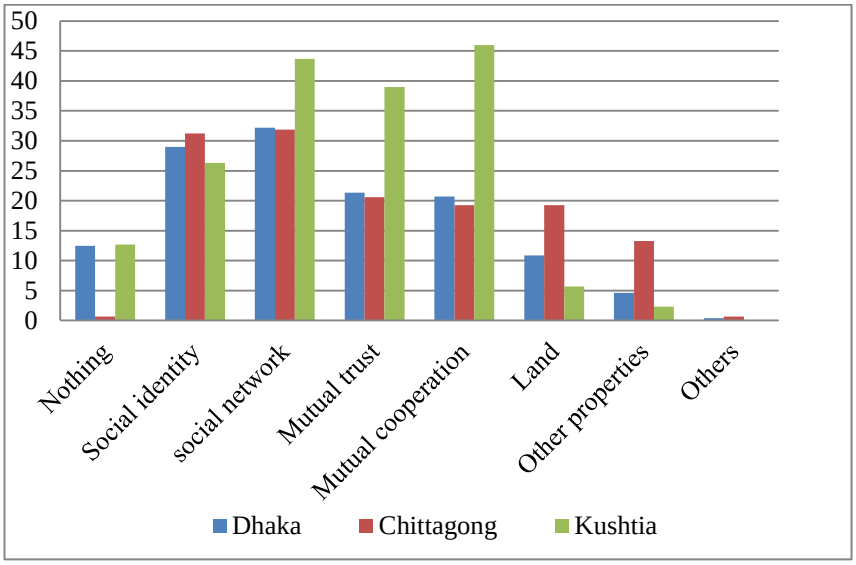
Source: (InM, 2014)

Figure 4.11: Key reasons for the migration of the urban poor

The question: *Why did they migrate from their previous living place?* is accompanied by 12 answer options (see Appendix A), and the respondents were allowed to choose more than one answer. According to the data, the percentages of respondents who migrated for economic reasons are approximately 56% in Dhaka and 71% in Chittagong; these are much higher than in Kushtia, at 37%. Next in order of importance comes 'high rent', followed by 'eviction' and 'river erosion'. Higher rent in a respondent's previous place was particularly common among the poor in Kushtia, where half of the respondents cited this, followed by approximately 39% in Dhaka and 20% in Chittagong. Eviction is another significant reason for migration to Dhaka, where approximately 12% of the poor respondents were reportedly evicted from their pervious living places.

4.5.4 Costs of migration

In addition to economic loss, frequent migration often involves social losses for the victims. Such migration may result in looser social connections, a condition which creates a sense of social insecurity. Social elements like networks, trust and cooperation, which are developed through enormous social exchanges over time, are often absent in a new place. Perhaps social connectedness is critical for the urban livelihoods of the poor; this is analysed in Chapters 6 and 7. Figure 4.14 shows the households' responses to losses resulting from migration.



Source: (InM, 2014)

Figure 4.12: Damage inflicted on the poor from forced migration

Multiple possible responses were allowed to the question, *Which social and economic losses were caused by migration?* A significant proportion of the poor cited the loss of social network, trust and cooperation. The percentages of respondents in Dhaka who reported those losses are approximately 29%, 32% and 21% respectively; they are approximately 32%, 21% and 19% respectively in Chittagong; and 44%, 39% and 46%, respectively in Kushtia. In contrast, the proportion of respondents who reported any economic losses, such as loss of land or other property, was much smaller.[19]

4.6 Conclusion

Low income and limited assets, as well as limited socio-economic opportunities, deprive the urban poor of access to minimum livelihoods opportunities and deny them anything other than a sub-standard living. Higher livelihood expenses in cities require the poor to spend a significant portion of their income on food and daily necessities, leaving them less to spend on housing. Consequently, informal housing becomes the last resort of the

[19]However, a lesser proportion of the comparator households reported such losses from migration; approximately 25% and 32% of households in Dhaka and Chittagong reported that they lost nothing. Yet the social cost of migration of poor households seems higher than economic loss, which hits the transient poor hardest.

urban poor. These informal settlements provide neither security of tenure nor adequate social opportunities, consequently binding the poor to a state of sustained vulnerability. To cope with the situation, some of the poor themselves move from one place to another, incurring social costs by destroying their social capital. This situation varies across cities, but the lives of the poor in larger cities seem to be fraught with many challenges. Despite the comparator poor in better-off neighborhoods enjoying greater socioeconomic opportunities, the urban lives of the poor are challenged by higher expense and socio-economic vulnerability.

Chapter 5: The Nature and Extent of Social Capital

5.1 Introduction

The urban poor in Bangladesh clearly lack income and wealth, as confirmed by the evidence presented in Chapter 4. Their persistent deficiency in physical (material) assets is also associated with a low achievement of human capital, which ultimately generates a vicious cycle of poverty (Haddad et al., 1999; Banks, 2016; Bashar, 2012). Moreover, such poverty persists over generations of the poor, in a situation with minimal socioeconomic opportunities (see chapter 4). Thus the poor cannot easily overcome poverty by selling unskilled labour in formal or semiformal labour markets. Also, new unskilled young workers are moving to cities to work in the clothing industry and in other low-paid work (see Chapter 4). In addition, the persistent threat of eviction from their homes, and discriminatory social attitudes towards the urban poor, create a state of social vulnerability that often pushes them even deeper into poverty (Chen and Ravallion, 2010; Ravallion and Sen, 1996; Hossain, 2011b; Mahmud, 2008). Nonetheless, there is little encouragement or incentive for the public and private sectors to invest in the urban poor. Equally, the Bangladeshi government's interventions are scant and often fraught with distributional problems (Nawaz, 2004). Although the prevalence of the non-government organisations (NGOs) help the poor and make them more visible through small-scale investment (primarily, microcredit), primary education and social services, nevertheless, such interventions hardly change their poverty in any sustainable way (Rahman, 1999).

Neither the conventional market economy nor forceful displacement by state agencies help to solve poverty. Rather, both push the poor further into poverty and social vulnerability by destroying the little socioeconomic progress that they make through various national and international efforts. In fact, such displacement arguably damages their social capital; an asset upon which it is believed the urban poor greatly rely (Woolcock, 1998b).

The literature on social capital, as reviewed in Chapter 2, is mostly placed in the context of developed countries, or within a macro-framework of developing countries. This chapter intends to investigate the nature and extent of different aspects of social capital of the urban poor in Bangladesh, and thereby to help fill an empirical gap in knowledge about social capital in this context. A number of tables present data on different social networks, trust and cooperation of the urban poor, with comparative statistics from the comparator groups. From the literature review, taken in conjunction with the socio-economic and demographic profile of the relevant populations, we may derive certain expectations or hypotheses concerning the extent and patterns of social capital likely to be found in these areas. For example, we would expect higher levels of certain types of social capital where people are better off, or where communities are more stable and less transient, or composed mainly of people from similar backgrounds.. Conversely, however, shared adversity may bring people together as a day-to-day coping mechanism.

The descriptive analysis of responses obtained from the field survey suggests that, despite socioeconomic vulnerabilities, trust and cooperation exist in poor neighbourhoods to a greater extent than in the comparator neighbourhoods. These outcomes of social capital are a significant new finding, which may have implications for housing the urban poor in Bangladesh.

5.2 The variables and measures

Theoretical debate on social capital has stimulated academic efforts towards the development of its measurement (Adlar and Kwon, 2002). The debate has focused attention on the interlinkage of the causes (e.g. socio-economic factors), manifestation (e.g. network, frequency of meeting) and consequences (e.g. trust, cooperation) of social capital. These are the potential measures of social capital that are commonly found in the literature (Woolcock, 1998b; Furstenberg and Hughes, 1995; Narayan and Pritchett, 1999; Knack and Keefer, 1997a; Casey, 2004), which this research has sought also to measure through its household survey, as described in Chapter 3.

Depending on the social classes involved, individuals' social networks may be formed at different levels. The networks formed within the same social group (class) are known as bonding networks (Ferlander, 2007; Adler and Kwon, 2002). They are formed and reinforced by frequent contact, and assist the process of 'getting by' on a daily basis

(Stone et al., 2003). Bonding networks are generated in a closer group and so denser ties and higher levels of trust and reciprocity exist, but bonding may also lead to exclusionary practices (Freeman, 1978). As a bridging social network is formed between more heterogeneous groups of people, the connection is more fragile and loose. However, network members may gain from the connection (Achuller et al., 2000). Linking networks are created through connection with those in authority; it is these connections between individuals and institutions which reach beyond community boundaries (see Section 2.2).

Putnam's quantitative measurement index to quantify social capital has been largely followed in the literature. It uses six measures: marital status, social actions (working together), sociability (frequency of meeting), trust and solidarity, safety and civic engagement (government or national level affairs) (Ramlagan et al., 2013; WB, 2001; Putnam, 1993). Community-level social capital studies view such capital as multidimensional and collectively owned (Bourdieu, 1986), or as a community-level resource (Putnam, 1993) that is embedded in the networks of mutual interactions and social virtues. Common measures of community level social capital include variables representing bonding networks (number of network, frequency of meeting), membership of associations, community engagement, trust and social support (Putnam, 2001; Scheffler et al., 2007; Ziersch et al., 2005b; Grootaert and Narayan, 2004; Wilson, 2006; Glaeser et al., 2000).

In this chapter, social interaction is considered the principal manifestation of social capital, which is more or less facilitated by the socio-economic status of the people. The contribution of social class to the generation of social networks, and the associated social outcomes, have been brought explicitly into the major theories of social capital (Bourdieu, 1986; Lin, 2001; Coleman, 1990). Therefore, it is expected that certain socioeconomic variables would influence social networks and social behaviours. More precisely, social class would be expected to frame the spectrum of social interactions and relations which people are able to engage in and influence the attributes of the particlar networks (manifestation of social capital), thereby affecting the key outcomes, e.g. nature of trust (immediate) and cooperation (ultimate), of social capital. The social networks, in the forms of numbers of networks (volume) and frequency of contact (strength) have been used in the literature for measuring social capital, and can also manifest the structure of social capital (Putnam, 2001; WB, 2001; Onyx and Bullen, 2000). Trust and cooperation

have been used in the literature as measures of latent or expressed behavioural outcomes of social capital (Harpham et al., 2002; Putnam, 2001; Fukuyama, 1996).

The formulation of social capital is based on social relations; the precise notion of it is based on differing but influential theories within the social science literature. Here, the underlying nature and extent of social capital is linked to deeply-rooted social and cultural variations across populations, and is manifested by different aspects of social class, social networks, trust and cooperation.

For some authors, the conception of social class seems to be that the processes that form social capital are the same as the processes that form social class (Bourdieu, 1986). This seems to make class inseparable from social capital. Another argument is that social capital is stronger and more effective for some classes (higher vs lower classes). It may also imply that bonding capital is generally formed within a class, whereas bridging, which is generally weaker, crosses class lines (see Section 2.2 for details).

The socioeconomic risks and potentials underlying socioeconomic vulnerabilities and linked to economic thresholds (income, assets, education and occupation) that are considered to be the key factors constraining people within the social class (see Appendix B). Variables for the social network, including the bonding and bridging/linking networks, are developed based on the measures of number and frequency of contact, each of the networks having been taken into consideration. In addition, some measures regarding the scope for socialisation (for example whether social gatherings take place in the community) have been taken as indicators of social relationships which might facilitate networks. Variables for the trust measure relate to how far people could rely on different networks. This includes, for example, measures of comparative trust in financial matters (e.g. lending money) and non-financial matters (e.g. looking after the house in the residents' absence) among the networks. These subjective/hypothetical measures have been collected on a Likert scale (see chapter 3). The cooperation measure also includes both financial (e.g. borrowing money) and non-financial (e.g. help in daily life) cooperation that the respondents actually received from the networks during the last year. These behavioural data are also measured as the degree of cooperation on Likert scales.

5.3 Results and discussion

This section discusses the descriptive estimates of the data obtained from the field survey. The estimates are based on the mean of the observed variables relevant to social capital. Some results are estimated on the t-tests to investigate group means.

5.3.1 Social opportunities and challenges

The measures of perception of social opportunities and challenges of the urban poor and comparator groups in Bangladesh are presented in Table 5.1. The mean and standard deviations of each of the responses have been shown for a general perception on each of the thirteen variables on socioeconomic risks and potential which may be considered as outcomes or indicators of socioeconomic situation or class. These socioeconomic variables may be taken as indicative of the social vulnerability of the groups concerned (Cutter et al., 2003). How closely correlated they are with objective data on economic positions, i.e. income, assets, etc., is shown in Appendix B. Social vulnerability refers to the inability of the urban poor to withstand adverse socioeconomic uncertainties, risks and threats.

According to the estimates, a moderate level of income uncertainty existed among the poor households compared to a very low level among the comparator households. However, both groups experienced some degree of income uncertainty due to the nature of their work /jobs. Relative income uncertainty is shown in table 5.1.

Table 5.1: Comparative risks and potential of the sample households living in poor areas and comparator areas

Risks and potentials	Mean		Mean Difference*		
	Poor	Comp.	(Poor-Comp.)	t-value	Obs.
1. Risk of income loss	3.67 (.05)	2.74 (.06)	-.93 (.08)	-11.84	1677
2. Risk of being evicted	4.06 (.06)	1.89 (.05)	-2.17 (.07)	-29.16	1681
3. Risk of flooding	3.03 (.05)	1.84 (.04	-.18 (.07)	-17.66	1684
4. Risk of fire hazard	3.70 (.05)	2.24 (.04)	-1.47 (.07)	-21.62	1684
5. Risk of house damage	3.29 (.05)	2.07 (.04)	-1.22 (.07)	-18.10	1675

Risks and potentials	Mean		Mean Difference*		
	Poor	Comp.	(Poor-Comp.)	t-value	Obs.
6. Risk of being discriminated to avail public facilities	2.83 (.05)	2.28 (.05)	-.55 (.07)	-8.14	1671
7. Risk of being accused of crime	2.48 (.05)	2.01 (.05)	-.48 (.07)	-7.01	1679
8. Risk of being harassed by the police or influential others	2.45 (.04)	2.19 (.05)	-.26 (.07)	-3.86	1676
9. Risk of health hazard in daily work	3.80 (.05)	2.91 (.05)	-.89 (.07)	-12.52	1668
10. Risk of health hazard for living environment	4.28 (.04)	2.99 (.05)	-1.29 (.06)	-19.65	1663
11. Potential of their children to be educated	3.80 (.04)	2.39 (.04)	-1.41 (.06)	-22.58	1676
12. Potential of economic development	3.91 (.04)	2.54 (.04)	-1.37 (.06)	-22.68	1680
13. Potential of social development	4.02 (.05)	2.40 (.04)	-1.62 (.06)	-25.51	1673

Source: InM (2014)

[Scale: 1=no possibility;…; 6=highest possibility. Higher risk represents higher social vulnerability and higher potential may represent the higher scope to overcome the existing situation. Figures within the parenthesis represent the std. error.* All mean differences are significant and based on the two-sample t-test with unequal variances.]

The greatest threats of all are the risk of being evicted from the poor areas and the potential health hazards inflicted by the living environment; these two issues highlight particular social vulnerabilities of the urban households living in poor/informal housing areas. On a six-point Likert scale in which 1 represents 'no possibility' and 6 represents 'highest possibility', respondents were asked to answer the questions related to eviction and health hazards: "what is the possibility of eviction from the land?", and "what is the possibility of health hazards from the surrounding living conditions?" Based on these survey records, health hazards from the living environment and insecurity of tenure from the threat of eviction represent what may be defined as a 'moderate level of vulnerability', based on scores higher than 4.0. However, these threats are much lower among the population living in the comparator areas (who are also relatively poor), where the level of vulnerability from the risk of eviction and potential health hazards are reported as 2.0 and 3.0 respectively; these two issues represent a very low to low level of vulnerability in comparator areas.

Both groups are typically exposed to very low to low levels of social vulnerability arising from harassment from police/local powerbrokers/influential others or from accusations of criminal activities, and have a low to very low likelihood of being unable to avail themselves of public opportunities (job, education, healthcare, public buses etc.) through discrimination. The urban poor are harassed by the police, exploited by the local powerbrokers, denied social services or accused categorically of being responsible for criminal activities in the cities slightly more often than the comparators (Banks et al., 2011a). The results support the contentions in the literature to some extent, but they also suggest that problems of this kind are not as serious as the basic problems of housing insecurity. Also, this evidence hints that local powerbrokers may be seen by residents as not necessarily a problem, but sometimes as a solution. However, the differences are still statistically significant, as shown in the fourth column (from the left) of Table 5.1. Social inequality and lack of good governance are allegedly accountable for these discrepancies (Sobhan, 2010). With respect to the three risks/threats highlighted, households living in the poor areas are socially more vulnerable, than the relatively poor living in the comparator areas. Social vulnerabilities inflicted from other challenges can be analysed in a similar fashion.

In general, the estimates reveal a moderate to low level of socioeconomic vulnerability associated with households in poor areas compared to those in comparator areas. Moreover, both groups have the potential for socio-economic development; however, the potential of the poor area residents seems to be greater than that of the comparator area residents (see points 12 & 13 of Table 5.1). This finding may conflict with the general perception that the poorer group has lower potential than the comparator group, which has better access to social opportunities. Social opportunities, such as education, healthcare, communication, living environment and better income opportunities are greater in comparator areas; factors that might provide higher socioeconomic potential to the comparator poor. However, an alternative argument can be made that the fewer socioeconomic opportunities in the poor areas may mean greater scope for development. The poor living in a comparator area may be trapped in a situation of higher house-rent and limited occupational choices. Once social status increases, households look down on some occupations such as day-labouring, rickshaw-pulling and garment work, and treats those doing such jobs as inferior regardless of how hard they actually work. Also the comparator group's higher expenses on utilities may squeeze their development potential.

5.3.2 Social networks

The social network is assumed to be the primary manifestation of social capital. It is regarded as a medium for social capital outcomes at both individual and collective levels. The volume and intensity of different types of social networks, such as bonding or bridging/linking, have largely been used in the literature to understand and measure the quality and extent of social capital. Also, this study conceives the scope and culture of social interactions that could facilitate social networks as the potential means for building a social network. Therefore, the following subsections discuss the scope for the socialisation of the study population, the formation of bonding and bridging/linking networks and the culture of social interactions.

5.3.2.1 Scope for socialisation

Family is perhaps the first place where individuals learn to socialise with others. A family helps its members to form social relationships with others. The socio-economic background of the family provides a particular context to the individual members regarding the scope and orientation of socialisation (Parke and Buriel, 2007). This socioeconomic status is linked to the social class that defines social networks. For example, individuals from a particular socio-economic background are likely to attend the same school (e.g. the children of poor households are likely to attend the public school) or to live in the same neighbourhood (e.g. the poor households are likely to live in a slum neighbourhood). These social institutions might be formal or informal; schools and religious institutions may be more formal settings for socialisation than the playing fields, the culture of volunteering or the culture of social gathering. These social institutions provide a specific pattern of social relations and social norms of trust and reciprocity to a particular group, and this is important to the understanding of social capital.

Respondents in the study areas were asked about those social institutions, and their involvement in them, that are assumed to facilitate social interactions and social relations of the urban poor. According to the responses (shown in Table 5.2), approximately one-fifth of households in both groups lives in a joint family structure, which may be comprised of close and/or distant relatives. These proportions seem significant. In addition, a few households are found to live together with non-relative households. Nonetheless, many of the sample households are reportedly living adjacent to their

relatives or with relatives in the vicinity of the same neighbourhood. Such relatives can be quite numerous – there can be up to forty households. This type of extended family living potentially facilitates a higher bonding social network for the poor.

A large majority (90%) of the households of both groups celebrate Eid/Puja (the biggest festivals of the country) with their neighbours in their communities. Only a quarter (22% poor and 30% comparator) of the remainder celebrated Eid/Puja in their villages. Presumably, their village is the place where they originate from. This small percentage may imply that many of the very poor households have lost touch with their origins. Living in the poor/slum neighbourhoods all year round might imply that the social network of the poor is primarily urban based.

Regarding visiting certain places, people and family in the previous year (which might be a platform for social interactions and relationships), household members of both groups are found to visit the mosque monthly, spending on average half an hour there. Although they don't follow the five-time prayer in a day injunction, the poor typically attended monthly prayers at the mosque. However, the frequency mosque attendance is higher in the poor areas than in the comparator neighbourhoods. The respondents also visited three to four neighbours and co-workers daily. The households living in poor areas usually visited more neighbours and spent a significant time in interactions compared to the time spent with their co-workers, which may suggest a stronger network of poor households and their neighbours.

Table 5.2: Culture and scope for socialisation and social interaction

	Percentage of HH		Mean (number of household, HH member or networks)		Mean Frequency of gathering**		Mean time spent in a single meeting (minutes)	
	Poor	Comp.	Poor	Comp.	Poor	Comp.	Poor	Comp.
1. Living in a joint family	18 [*N*=990]	18 [*N*=693]						
2. Living with a non-relative family	2	1						
3. Relatives living in the same neighbourhood			3.5 [*N*=739]	3.7 [*N*=485]				
3. Invited to a neighbourhood event	97 [*N*=998]	98 [*N*=696]						
4. Celebrated vacation (e.g. *Eid, Puja*) in the current neighbourhood	90	90						
5. Celebrated vacation in village	22	30						
6. Household member attended mosque			1.2	1.5	4.2	3.6	32	32
7. Household member visited neighbour			4.0	3.3	6.0	6.0	13	14
8. Respondent visited co-worker			5.0	6.0	6.0	6.0	3	2
9. Freq. of community gathering					3.0	2.6	20	14
10. Freq. of participation in community gathering					2.5	2.3	10	6
11. Freq. of friends gathering outside neighbourhood					2.4	2.6	101	102
12. Freq. of participation in the group meeting					1.1	1.0		

Source: InM (2014)

[**Scale: Frequency of gathering/attending code: 6=daily; 5=weekly; 4=monthly; 3=yearly; 2=biennial 1=never]

5.3.2.2 Bonding network

The bonding network is assumed to be the major form of social network. Frequent interactions form a close tie with relatives, friends and neighbours, or with other persons of similar socioeconomic conditions, backgrounds and interests. Such ties are the basis for social trust and cooperation (Fukuyama, 1996; WB, 2001). In our study population, relatives and neighbours are the most important networks among six bonding networks of interest (Table 5.3). Almost every household in both groups reportedly maintains regular contact with their relatives and neighbours. Households in poor areas are found to have ten such relatives on average, compared to twelve in the comparator areas. Many of these relatives live in the same neighbourhood, with only a few outside; the proportion of relatives living in the same neighbourhood is higher in the poor areas. Moreover, both the groups maintain a weekly contact with five neighbours on average. However, the poor maintain a marginally larger network with the neighbours than do the comparators. Details on six bonding networks, whether member live in the same neighbourhood, or outside, and the frequency of contacts, are shown in Table 5.3.

Table 5.3: Bonding networks of the urban poor

Network	Proportion of households maintains network		Mean number of network				Mean frequency of contact**	
			Within community		Outside community			
	Poor	Comp.	Poor	Comp.	Poor	Comp.	Poor	Comp.
Relatives	97% [*N*=986]	97% (*N*=694)	3.57 (6.2)*	3.51 (5.7)	6.65 (8.8)	8.31 (8.3)	4.89 (0.9)	4.93 (0.9)
Friend	44% [*N*=982]	61% (*N*=688)	1.32 (3.7)	2.25 (4.4)	1.17 (5.3)	1.90 (6.6)	5.29 (0.9)	5.39 (0.8)
Neighbour	97% [*N*=991]	99% (*N*=691)	5.33 (5.0)	4.96 (4.0)			5.85 (0.5)	5.81 (0.7)
Coworker	29% [*N*=988]	38% (*N*=690)	.60 (5.5)	.55 (2.2)	.78 (2.1)	1.47 (5.1)	5.56 (1.0)	5.66 (0.8)
Parent of child's friend	6% [*N*=984]	11% (*N*=691)	.11 (0.8)	.24 (1.2)	.05 (0.5)	.16 (1.1)	4.58 (1.3)	4.73 (1.3)
Community leader	12% [*N*=989]	8% [*N*=689]	.14 (0.6)	.08 (0.4)			4.61 (1.0)	4.03 (1.4)

Source: InM (2014)

[**Scale: Frequency of contact code: 6=daily; 5=weekly; 4=monthly; 3=yearly; 2=biennial 1=never. * The figure in the parenthesis represents the std. dev.]

Friends of the poor also form an important network, exceeded only by relatives and neighbours. A significant proportion of comparator households reportedly maintains contact with friends. As recorded, 44% of poor households and 61% of comparator households, respectively, maintain 2.5 and 4.15 friends on average. This means the comparator households maintain a higher network with friends than do the poor.This may be related to their somewhat higher standard of living, enabling more choice in socialisation, whereas the poor are struggling and mainly depend on people they can call on immediately. The ability to participate in social activities is positively associated with income/economic resources (Bailey et al., 2015). However, both groups are found to maintain daily or weekly contact with their friends.

Respondents are also found to maintain networks with their co-workers. Though this an almost inevitable corollary of working, 29% of the poor households and 38% of the comparator households have been found to be in regular contact with a small number of co-workers. Other networks seem insignificant with respect to the proportion of households maintaining such networks; for example, parents of children's friends and community leaders. In general, the poor living in a comparator area have greater networks, particularly with friends and co-workers, than those living in a poor area; however, the differences are not that great.

5.3.2.3 Bridging or linking network

A bridging or linking network enables connection between someone of a lower socio-economic class and persons or organisations with a higher level of resources. These networks may yield higher economic outcomes to the person with lower socio-economic status, through facilitating access to information and socio-economic opportunities. This study has considered nine persons and organisations as measures of bridging networks that may facilitate economic opportunities. However, it is not totally surprising to find that the bridging network of the poor is minimal; with very few having such a network (Table 5.4). Moreover, the bridging network is even more diminished in poor areas; presumably, only NGO connections initiate socioeconomic opportunities for the poor.

One-fifth of the poor households are reportedly connected with NGOs, compared to only 8% of the comparator households. A very small percentage of the poor have some other bridging networks. Approximately 6% of households in poor areas reported that their relatives have a political connection, compared to only 3% in comparator areas. However,

the comparator households have better-developed bridging/linking networks with others. Details on different networks, volume and frequency of contact are shown in Table 5.4.

As recorded, 17% of poor households and 23% of comparator households are found to have connections with professionals who are working formally in established organisations and who have a regular income. On the other hand, 29% of poor households and 35% of comparator households have a connection with businessmen. However, the high percentages of households with business connections may be because there are many small businesses and businessmen in the neighbourhoods, operating marginal enterprises. Many of those professionals or businessmen are found to live in the same communities. Therefore, the findings show that only a minority have connections, e.g. with business men; the number of such connections is not very large, and that the frequency of contact with them is low.

Table 5.4: Bridging networks of the urban poor in Bangladesh

Network	Proportion of households maintains network		Size of network				Frequency of contact**	
			Within community		Outside community			
	Poor	Comp.	Poor	Comp.	Poor	Comp.	Poor	Comp.
1. Involvement of HH member with the political party	2.2% [*N*=995]	3.2% (*N*=694)	2.0 (1.24)*	1.7 (1.1)	2.6 (1.8)	2.5 (2.7)	3.2 (1.2)	2.6 (1.4)
2. Involvement of relatives with the political party	6.3% [*N*=994]	3.5% (*N*=693)	1.8 (0.5)	2.6 (2.5)	2.5 (1.5)	1.9 (1.2)	3.4 (1.1)	2.9 (1.3)
3. Involvement of HH member with a professional(formal job)	16.8% [*N*=995]	22.5% (*N*=693)	2.1 (1.9)	2.0 (1.6)	2.7 (3.2)	2.8 (2.8)	3.2 (1.7)	3.2 (1.1)
4. Involvement of HH member with a businessman	29.4% [*N*=993]	34.8% (*N*=690)	1.6 (0.9)	1.9 (1.2)	2.1 (1.5)	2.6 (2.2)	2.6 (0.9)	2.7 (0.9)
5. Involvement of HH member with the govt. service providing org.	7.8% [*N*=991]	15.3% (*N*=691)	1.0 (.)	1.7 (0.8)	1.2 (0.4)	1.4 (0.7)	2.6 (0.9)	2.7 (0.9)
6. Involvement of HH member with the volunteer org.	7.2% [*N*=992]	11.5% [*N*=689]	1.0 (.)	2.8 (2.1)	1.6 (0.9)	1.8 (1.6)	3.8 (1.0)	3.7 (.9)
7. Involvement of HH member with the NGOs	18.3% [*N*=981]	8.3% (*N*=686)	1.5 (3.4)*	1.5 (0.7)	1.5 (1.1)	1.4 (0.6)	3.8 (1.1)	3.7 (1.0)
8. Involvement of HH member with the local govt. official	9.5% [*N*=962]	8.2% (*N*=681)	1.9 (0.9)	1.1 (0.4)	1.2 (0.7)	1.4 (.9)	3.1 (0.8)	3.4 (1.1)
9. Involvement of HH member with the police/justice depart.	2.0% [*N*=834]	4.0% (*N*=545)	2.5 (2.1)	-	1.4 (0.7)	2.5 (2.0)	4.2 (1.1)	3.8 (1.1)

Source: InM (2014)

[**Scale: Frequency of contact: 6=daily; 5=weekly; 4=monthly; 3=yearly; 2=biennial 1=never].* The figure in the parenthesis represents the Std. Dev.

The number of contacts with political parties, professionals or businessmen, through the involvement of household members or relatives, varies between three and five among the comparator households, whereas it is between two and four among the poor households. Nonetheless, the frequency of contact with the networks is sporadic.

5.3.2.4 Cultural capital

Bourdieu's, Coleman's and Lin's social capital theories all note the role of culture of social interactions when building social networks. They suggest that regular social gatherings, such as religious congregations, political demonstrations, voluntary activities, social club activities and national rallies, facilitate social interactions. Thus, such gatherings presumably help build social networks. A portion of the sample households attended a 'religious congregation' and 'national rallies' – two out of five social gatherings listed in the questionnaire. According to estimates, three-fifths of both groups had attended a religious congregation in the last year. Also, one-fifth of the poor sample and a quarter ofthe comparator sample attended national rallies. However, a small proportion of households reportedly attended other social gatherings. Detailed information on the participation of social gathering is shown in Table 5.5.

Table 5.5: Culture of social gathering among the urban poor

(Members who attended social gatherings in the last year)

Network	Proportion of households		Mean frequency of attending gathering	
	Poor	Comp.	Poor	Comp.
1. HH member attended the religious congregation	59.0% [*N*=997]	60.0% [*N*=692]	3.3 (0.7)*	3.3 (0.6)
2. HH member attended the political demonstration	13.0% [*N*=994]	4.0% [*N*=693]	3.1 (0.9)	3.1 (0.8)
3. HH member attended the voluntary works	5.0% [*N*=990]	4.0% [*N*=693]	3.4 (1.0)	3.5 (1.0)
4. HH member attended the social club (formal meeting)	1.0% [*N*=994]	1.4% [*N*=693]	3.3 (1.6)	3.8 (1.6)
5. HH member attended the rally (to celebrate national days)	18.1% [*N*=994]	25.2% [*N*=691]	3.1 (0.5)	3.1 (0.5)

Source: InM (2014)

[Scale: Frequency of contact code: 6=daily; 5=weekly; 4=monthly; 3=yearly; 2=biennial 1=never. *N*=total observation; *the figure in the parenthesis (.) represents the Std. Dev.]

Nonetheless, the frequency of participation in those social gatherings is not high. As recorded, both groups participated in either a religious congregation or national rally approximately once a year. While some of the literature argues that the culture of attending social gatherings should help the urban poor to some extent, in building a social network, this evidence suggests that such behaviour may not be very beneficial in this case.

5.3.3 Trust

5.3.3.1 Trust in bonding and bridging networks

Trust, as well as cooperation, is assumed to be an outcome of social transactions, and is thus believed to have a relationship with social networks (Fukuyama, 1996). Respondents were asked to reflect on their perceived level of trust in nine networks in respect of the following three issues: (i) lending money; (ii) taking care of the house in the family's absence; and (iii) receiving help/support in an emergency.According to the survey results, relatives are the most trusted network. Neighbours and friends are also trusted, compared to the community leader, political leader, NGO officials and religious leaders. Table 5.6 shows comparative levels of trust between the poor areas sample households and comparator households.

Table 5.6: The (mean) degree of household trust in networks

Network	Lending money		Taking care of house in absence		Reliable in emergency	
	Poor	Com.	Poor	Com.	Poor	Com.
1.Relative	9.7 (1081)	9.7 (679)	8.8 (851)	8.6 (512)	9.6 (1059)	9.6 (667)
2.Friend	8.0 (781)	8.1 (529)	8.0 (652)	8.3 (423)	7.9 (748)	8.1 (524)
3.Neighbour	8.9 (1028)	8.9 (657)	9.8 (1048)	9.8 (680)	9.0 (1044)	9.0 (678)
4.Co-worker	7.0 (732)	7.2 (460)	6.9 (653)	7.1 (402)	6.9 (728)	7.1 (462)
5.Group-member	5.5 (520)	5.7 (318)	5.5 (515)	5.8 (320)	5.5 (522)	5.5 (315)
6.Community leader	4.8 (592)	4.9 (394)	5.0 (592)	4.9 (393)	4.8 (596)	4.9 (393)
7.Political leader	4.0 (592)	4.0 (395)	4.0 (583)	4.2 (390)	4.1 (591)	4.1 (395)

Network	Lending money		Taking care of house in absence		Reliable in emergency	
	Poor	Com.	Poor	Com.	Poor	Com.
8.NGO official	3.4 (522)	3.2 (321)			4.0 (545)	3.8 (319)
9.Religious leader	3.6 (595)	3.3 (395)	3.3 (584)	3.1 (389)	3.4 (583)	3.5 (385)

Source: InM (2014)

[Higher point indicates the higher degree of trust in networks; scale: 10 = highest degree of trust and 1= lowest degree of trust]. Figures within the parenthesis indicate the number of responses

Respondents scaled their trust across the networks to identify who they trusted for lending money, taking care of the house in the family's absence and relying on help/support in an emergency. According to the survey, relatives are the most trusted network for lending money and relying on in an emergency, for both the poor households and comparator households. The scores for both cases are close to the highest levels of trust. However, both groups trusted the neighbours most for taking care of the house in the family's absence. This is not surprising, as the trusted relatives may not be available to care for the house, so that particular situation would require reliance on neighbours who may not be relatives. However, neighbours are not only trusted in caring house in the family's absence, but also are the second most trusted network for lending money or relying on in an emergency. Moreover, the poor area households have higher trust in neighbours compared to the comparators. Friends and co-workers are trusted; however, only after relatives and neighbours. Trust in other networks is even lower. Details of the levels of trust in different networks are presented in Table 5.6.

5.3.3.2 Trust in civic institutions

This study went further into establishing the general perception of trust in the civic institutions involved in community affairs. Respondents were asked whether they agree or disagree with statements that civic institutions (such as local government, police, judiciary, services authority and national and international development organisations) delivered expected services to the urban poor households. According to the responses, households are largly inclined to 'disagree' with the statements. However, they tend to neither agree nor disagree over the statements about the local government authority and police. Generally, the findings would establish that the urban poor trust public institutions more than NGOs. This

would apear to conflict with a general expectation that NGOs are more trusted by their beneficiaries (Dowla, 2006b), as they are expected to work for the betterment of the marginal groups in society through various efforts towards urban poverty reduction. However, there are small differences in the degree of agreement with the statements on civic organisations between the poor and comparator households. The comparative levels of agreements and disagreements are presented in Table 5.7.

Table 5.7: Degree of trust in the institutions

Statements made	Degree of trust				
	Mean		Mean Difference**		
	Poor	Comp.	Poor-Comp.	t-value	Tot. obs.
1. Received services(any) from the local government	3.2 (.04)*	2.9 (.05)	.22 (.06)	3.6	1549
2.Received services from the law enforcement agency	2.8 (.04)	2.7 (.04)	.16 (.06)	2.8	1646
3. Judiciary is neutral	2.7 (.04)	2.7 (.04)	.06 (.06)	1.1	1582
4. Received water supply	2.7 (.04)	2.4 (.04)	.33 (.06)	6.0	1518
5. Received electricity supply	2.4 (.03)	2.0 (0.3)	.40 (.05)	8.7	1686
6. Political parties work for the public welfare	2.5 (.04)	2.4 (.05)	.06 (.06)	.9	1531
7. Local NGOs work for the public welfare	2.2 (.03)	2.4 (.04)	-.16 (.05)	3.0	1620
8. International NGOs work for the public welfare	2.2 (.04)	2.4 (.05)	-.17 (.06)	2.8	1437

Source: InM (2014)

[Scale: 5= strongly agree; 4= agree; 3= neither agree nor disagree; 2=disagree and 1= strongly disagree] * Figures in the parenthesis represent std. err. ** Two-sample t-test with unequal variances

Poor households are more likely than the comparator households to agree that the public institutions provide expected services to them. This may suggest that the expectation of public services is lower among the poor living in a poor area (Ruel et al., 1999). The mean differences of agreement with the statements between the two study groups are mostly statistically significant (see the t-value in column 2 from the right), particularly the statement about the service authorities. In the case of electricity and water supply authorities, poor

households' agreement is likely to be 0.4 and 0.3 points higher than with comparator households. This may hint that these service facilities are not much better in comparator houses. Mean differences of agreement with other institution are not large. The differences between the two study groups are not significant in the scores for judiciary and political parties. Though generally, trust in the judiciary is higher than trust in political parties, this attitude may contradict the overall public trust in the judiciary, as alleged political and administrative interferences in the judiciary often cause public distrust (Mollah, 2008). Surprisingly, poor households are more likely to distrust the national and international NGOs. Is it perhaps because the NGOs in Bangladesh have not really effectively helped the urban poor in informal housing areas, which may undermine their credibility among the extreme poor (Banks et al., 2011a).

5.3.4 Cooperation

Cooperation can also be a consequence of social relationships, and thus may be considered as a form of social capital, or as a practical benefit derived from it. To gain a general perception about cooperation among the urban poor, respondents were asked about the cooperation received from their networks. This question relates to both financial and non-financial cooperation.

5.3.4.1 Financial cooperation

Again, relatives are important as a source of financial cooperation for the urban poor (as in the UK – see (Fitzpatrick et al., 2016); this is similar to the case of trust. A significant proportion of poor and comparator households – 30% and 27% respectively – reportedly received financial cooperation from their relatives. According to the responses, the average amount of financial cooperation received by the poor households is BDT 5,170 (approx. £51) which is about a half of their monthly income. The mean cooperation received by the comparator households from relatives is substantially higher at BDT 17,456 (approx. £171), which is equal to the average monthly income of the comparator group.

Neighbours are equally important to the poor households when it comes to receiving financial cooperation. One-third of the poor reportedly received approximately equal financial cooperation from their neighbours as from their relatives. The comparators received substantially less financial cooperation from their neighbours even though, as we have seen, a significant proportion of them received cooperation from relatives. This finding may corroborate the particular importance of neighbours to the urban poor, and may have

implications for the outcomes of their social capital. Which is more important, the high level of cooperation or the higher proportion of recipients? Though cooperation the comparator group received from their friends is higher than that from their neighbours, the proportion of households which actually received that cooperation is smaller. Moreover, financial cooperation is rare with group members, coworkers and community leaders, and not very widespread even among friends.

Table 5.8: Financial cooperation received by the households from the bonding networks

Network	Poor		Comparator	
	Amount (£)	Level of coop.	Amount (£)	Level of coop.
Relative	51	5.92 (331)*	171	6.42 (189)
Friend	3.4	5.47 (69)	16	5.75 (62)
Neighbour	47	5.56 (332)	6.7	6.02 (181)
Group member	.17	5.28 (7)	3.5	6.28 (7)
Coworker	.96	5.28 (52)	8.8	5.96 (54)
Community leader	.04	5.00 (7)	.02	5.50 (2)
N	*999*		*696*	

Source: InM (2014)

[Scale of cooperation: 7 = very good cooperation…1 = non-cooperation] * The figure in the parenthesis ( ) represents the number ofobservations.

The respondents were asked further about their expectations of financial cooperation from their networks; responses are shown in Table 5.9. This shows the amount of cooperation respondents expected to receive, and the perception of the level of cooperation. Both groups largely expected more cooperation from their networks than they actually received. The expected cooperation might also be an important indicator of future cooperation among the urban poor, as discussed below.

Table 5.9: Expected level of financial cooperation from the bonding networks

Network	Poor		Comparator	
	Amount (£)	Level of coop.	Amount (£)	Level of coop.
Relative	76 (999)*	6.05 (728)	255 (696)	6.37 (526)
Friend	125 (999)	5.37 (168)	31 (696)	6.16 (117)
Neighbour	161 (999)	5.57 (543)	104 (696)	6.06 (298)
Group member	.69 (999)	4.90 (43)	1.20 (696)	6.4 (5)
Coworker	23 (999)	5.05 (85)	28 (696)	6.08 (76)
Parent of child's friend	20 (999)	5 (10)		
Community leader	.23 (999)	5.03 (26)		

Source: InM (2014)

[Scale of the level of cooperation: 7 = very good cooperation …1 = non-cooperation] *Figures in the parenthesis ( ) indicate the number of observations

It is not surprising that the poor households would expect cooperation from their relatives, friends and neighbours. But what is noticeable is that the households expect to receive higher cooperation from their neighbours and friends than from their relatives. What could be the possible explanation for this perception? Relatives of the urban poor may also be poor, so may not be able to offer or provide financial cooperation. Relatives of a large majority of the poor households are living in the same neighbourhood, which may hint at their poor economic circumstances. According to the survey, the poor households believed they could receive BDT 7,711 (approx. £68) cooperation from their relatives, if asked. This expectation is 50% higher than the average cooperation they actually received. Nonetheless, their expectations of friends and neighbours are also greater than the actual cooperation received: BDT 12,758 (approx. £113) and 16,410 (approx. £145), respectively. These findings could further support the highly interdependent nature of the urban livelihoods of the poor.

In contrast, comparator households expected to receive higher cooperation from the relatives than from friends or neighbours. Moreover, the expected amount of cooperation from the relatives – BDT 26,041 (approx. £231) – is much higher than expected from their neighbours

and friends, which totalled BDT 10,409 (approx. £92) and BDT 3,145 (approx. £28) respectively. Unlike poor households, very few comparator households expected financial cooperation from other networks.

5.3.4.2 Non-financial cooperation

Non-financial cooperation is common among the urban poor. Table 5.10 details the non-financial cooperation received by the study population from four major networks. Cooperation includes borrowing household items, and receiving help in repairing a house. Relatives, friends and neighbours again seem important providers of non-financial cooperation. A small proportion of households are found to receive cooperation from other networks, and these have not been reported.

The highest proportion of both groups reportedly borrowed household items mostly from their relatives and neighbours, with cooperation from the neighbours exceeding that from the relatives. Compared to 10% and 14% of poor and comparator households respectively who received cooperation from their relatives, the proportion that received cooperation from neighbours is 1% and 16% respectively. This means that the cooperation from the neighbours is seven percentage points higher in the poor areas, and it underlines the poor's dependency on their neighbours. A similar finding also reveals in the poor's expectations of non-financial cooperation from neighbours and relatives. Approximately one-fifth of each group believes that they would receive cooperation from their relatives. The expectation of borrowing household items from neighbours is even higher.

Other forms of non-financial cooperation, for example in gaining work or protecting children from potential danger, are received from relatives and neighbours. However, the higher dependency on neighbours than on relatives is again reflected among the poor households. Cooperation from the other two networks is received by only a small proportion of households, as seen in Table 5.10.

Table 5.10: Non-financial cooperation from the networks—relatives, friends, neighbours, and group members

Cooperation received	From relatives				From friends			
	Poor households (%)		Comp. households (%)		Poor households (%)		Comp. households (%)	
	Occurred	Expected	Occurred	Expected	Occurred	Expected	Occurred	Expected
Borrowing HH items	10.0	21.0	14.0	19.8	1.2	1.9	0.4	1.9
Gaining work	6.9	11.6	5.0	9.5	2.0	5.9	1.3	6.6
Protecting children from danger	3.0	8.5	5.0	8.9	2.6	2.9	2.4	2.7
Gaining information	2.5	6.8	2.3	9.0	1.3	3.0	0.6	2.8
Taking HH member to hospital	2.2	5.1	4.0	5.0	1.1	1.5	1.2	1.9
Resolving family dispute	2.8	3.1	2.3	2.6	0.7	1.5	0.1	1.2
Building/repairing house	1.3	3.4	.57	1.3	0.3	0.5	0.1	0.3
Cooperation received	From neighbours				From group-members			
Borrowing HH items	17.3	29.2	16.2	27.2	0.6	0.6	0.1	0.4
Gaining work	10.1	12.0	14.4	15.1	0.9	0.6	0.3	0.7
Protecting children from danger	7.1	9.9	9.6	10.2	0.4	0.4	0.1	0.4
Gaining information	1.7	4.7	3.6	4.9	0.4	1.7	0.4	0.7
Taking HH member to hospital	2.4	4.3	4.5	4.6	0.7	1.3	0.1	0
Resolving family dispute	2.1	2.7	2.0	2.7	0.7	0.7	0.1	0
Building/repairing house	0.7	2.7	0.4	0.3	0.2	0.5	0.0	0
N	*999*		*698*		*999*		*698*	

Source: InM (2014)

The study further investigated the level of cooperation received; this data is not shown in the table. Perception of cooperation was sought on a 7-point Likert scale, where 7 represents the 'highest cooperation' and 1 represents 'non-cooperation'. A considerable proportion (18%) of poor households reportedly received a degree of cooperation, largely from their relatives and neighbours. Perceptions range from very good to moderate; of these, approximately 15% are good or very good. Only a small proportion (0.3 %) reported non-cooperation from their networks. Similarly, approximately 19% of comparator households reportedly received very good to moderate cooperation. However, none reported non-cooperation from the neighbours. This analysis substantiates the previous finding that relatives and neighbours are important to the urban poor for both financial and non-financial cooperation in their daily lives.

5.4 Conclusion

The urban poor in Bangladesh have limited access to socioeconomic opportunities. A low to moderate level of social vulnerability affects the urban poor living in informal settlements, compared to a low level of vulnerability of the moderately poor living in comparator neighbourhoods. Various sources of vulnerability, particularly the risk of eviction from the land and of potential health hazards, largely create higher levels of vulnerability. This may have serious repercussions for the social capital of the urban poor. Displacement can disrupt the social relationships that the urban poor build over the years through numerous social transactions. The field evidence highlights the interdependent way of life of the urban poor. Additionally, the lack of security of tenure that hinders the sense of neighbourhood belonging potentially reduces the elements of trust and cooperation. The potential effects of health hazards are twofold: they incur additional healthcare expenses for the already financially burdened urban poor; and health problems reduce their lifetime working hours. Thus a minimum standard of living environment with necessary security of tenure may have potential implications in reducing social vulnerabilities of the urban poor, and in improving their lives. Improved living conditions, informed by the issues examined above, may also help build a strong sense of belonging and social capital; these possible changes therefore have potential policy implications for sustainable poverty reduction.

Socioeconomic vulnerabilities of the urban poor have limited the scope for socialisation and social interactions which restrict their social networks, particularly with friends and with wider ‘bridging networks’, and thus their social capital. However, their neighbours are an important social network (a manifestation of social capital), which potentially generates other forms of social capital such as trust and cooperation in the neighbourhood. Such social networks among neighbours offers cooperation which is of practical value. More social interactions with the neighbours thus potentially yield more trust and cooperation in poor neighbourhoods. Such trusted and collaborative community relationships may have potential implications in the livelihood developement of the urban poor. These descriptive findings provide a context for a further investigation into the outcome of social capital, in relation to social networks and other soci-economic variables, while providing pointers to some important relationships which may emerge.

Chapter 6: The Intermediate Outcome of Social Capital: Trust

6.1 Introduction

The preliminary findings suggest that the urban poor neighbourhoods have a low to moderate level of social vulnerability compared to a low level in comparator neighbourhoods (see Chapter 5 for details). This vulnerability particularly comes from the risks of eviction and potential health hazards in the informal housing environment (refer to Appendix B). This vulnerability risks the social capital of the poor in a number of ways. Short 'living periods' in a place may disrupt or limit the social relations that are built through the numerous social exchanges for living together in a neighbourhood. Thus, displacement caused by settlement could weaken social networks, trust and cooperation (Woolcock, 1998a). Also, poor health as a result of informal living involves additional expense and affects income both in the short and long terms.

It is argued that the strategic (or longer-term) goals of social capital have an impact on issues such as health status, participation rates in education, employment rates, household income and business confidence (Stone, 2001: 5, reporting Spellerberg 1997, pp. 43-45; Poortinga, 2012). These outcomes could be empirically related to measures of social capital and the immediate social outcomes (see Section 2.2). Stone has shown that social capital is an important driver of social inclusion, and that social inclusion leads to improvements in personal wellbeing as well as an increase in income (Stanley et al., 2012).

Mohan and Mohan (2002) point out that levels of trust are the best indicators of measurement for social capital. Trust is the expectation that arises, within a community, of regular, honest and cooperative behaviour, based on commonly shared norms, of other members of that community (Fukuyama, 1996: , pp.26 in Stone, 2001 pp.25; Bakshi et al., 2015). Thus, trust and reciprocity are closely related. The means of measuring norms of trust and reciprocity are less well developed than are the measures of the network

structure. Three broad types of trust are identified in the literature: (1) trust of familiars or particularised trust, which exists in established relationships and social networks; (2) generalised trust, extended to strangers on the basis of expectations of behaviour or a sense of shared norms; and (3) civic or institutional trust, which refers to basic trust in institutions of governance or civil society, including fairness of rules, official procedures etc. These forms of trust can be equated with bonding social capital (between family and close friends), bridging social capital (where the networks extend to more removed associations, such as work and school associations), and linking social capital (where trust is extended to more official relationships, such as government and other agencies) (Stone et al., 2003).

As with networks, Stone gives a range of questions which have been used in studies to measure 'trust'. She notes the *ad hoc* approach to trust measurement, where measures of norms, attitudes and the outcomes of norms are not clearly delineated. In addition, the measurement of generalised trust often fails to specify a spatial boundary, such as community or nation (Halpern, 1999; Stone, 2001). This supports Stone et al. (2003) in noting that often trust measurements are unclear and too broad, of the form 'most people can be trusted'. Indeed, most trust measures are national, few being state-based measures. This also raises the issue as to whether social capital is variable between locations. Therefore, one uniform measure of trust may not be valid for use across locations (Mohan and Mohan, 2002; Onyx and Bullen, 2000).

Johnson et al. (2003) have established what they call principles of measurement of trust (see chapter 2). They specify the arena of activity to which measures apply: political organisations, economic and occupational organisations and voluntary and social organisations. Poor people have fewer bridging/linking networks; this may be a result of less access to or trust in people from higher classes or public and private organisations. Again, this trust is circular – if poor people have fewer bridging/linking networks, a component of social capital, then they will have less trust. However, trust in civic organisations may have policy implications in generating and managing resources, or energising federation, particularly in urban poor neighbourhoods where institutional involvement is less (Ng et al., 2016; Robbins, 2016). Trust in organisations may be useful for mobilising local resources as well as mediating/outsourcing investment (Ostrom, 2014; Pretty, 2003). It also enhances community governance by establishing implicit norms (Bowles and Gintis, 2002).

This chapter discusses trust in bonding and bridging/linking networks. Trust in networks is predicted in relation to network structure (volume and strength), household income and living period. The results are expected to give an indication on trust in networks that might help with strategies to mobilise resources required for neighbourhood development.

Theoretically, a positive relationship is expected between the network structure and the intermediate outcome of social capital, *trust*. This means that the higher volume of network and interpersonal interactions are expected to positively affect the trust of the study population in networks. Additionally, the interrelated socio-economic factors such as income and living period, which could be markers of social class, are also expected to influence trust among individuals. Woolcook's empirical evidence and Fukuyama's theoretical proposition underpin the assumption that higher income and longer living period are associated with an increase in trust. Thus, theoretically, higher income and longer living period in a place would help increase social capital. Moreover, our primary findings indicate that the poor trust their neighbours more than other bonding networks.

This chapter is organised as follows: Section 6.2 formulates the linear relationship between trust and explanatory variables linked to the theoretical proposition discussed. The section also presents the results of the estimation for each of the networks, grouped into two sub-headings: (1) trust in bonding networks and (2) trust in civic organisations. The section is followed by a general discussion in 6.3. Section 6.4, in which the analysis is based on Logit and Probit estimations, is dedicated to an exploration of trust in neighbours. The final section draws a general conclusion on the analysis and indicates a further line of investigation.

6.2 Trust in bonding and bridging networks

To measure the perceived degree of trust in bonding networks, respondents were asked to rank their trust in each of ten possible networks. They ranked their relative trust between 1 and 10 against each network. For example, the respondents ticked 1 for relatives, if they trusted their relatives most. But we recoded the ranks of trust in the later stage so that a higher value represents a higher trust in the network. Also, respondents were asked to rank their trust in networks separately in three sets of circumstances: (i) lending money; (ii) looking after their house in their absence; and (iii) emergency help.

In addition, the respondents were asked to reflect on eight statements about the services of the eight civic organisations. These are: local municipality, police, law court/justice, water supply authorities, electricity supply authorities, political parties, local NGOs and international NGOs. Responses to the statements were obtained on a 6-point Likert-scale where a higher value represents higher agreement, assuming that agreement with the statements reflects trust in the organisations.

Suppose that i is a member of a community, ω_i is any outcome for an observation i which is linearly dependent on $\mathbf{X}_i$: network structures, income and living period. If explanatory variables $\mathbf{X}_i$ have a *linear* relationship with the degree of trust, ω_i, the function can be written as follows:

$$\omega_i = \mathbf{c}\mathbf{X}_i + J \quad SN_{g(i)} + u_i \qquad (6.1)$$

Where **c** are the parameters explaining the linear relationships between individual trust and household characteristics, and J explains the relationship between the trust and network structure.

The linear relationships between the dependent and explanatory variables can be tested using Ordinary Least Square (OLS) estimation. The estimates are in standardised *Beta* values[20] and presented in Table C.1, Table C.2, Table C.3 and Table C.4 in Appendix C.

6.2.1 Results: trust in bonding networks

6.2.1.1 'Lending money'

According to the regression estimates, the effect of having a larger network on trust regarding *lending money* is largely insignificant. Having more relatives, neighbours and friends does not help increase trust in those networks. However, a higher frequency of interactions (strength) with relatives and neighbours influences trust in them. This means that more interactions help increase trust, though these increases vary widely across networks. The effect is particularly significant in the case of trust in *neighbours*. Trust increases by .18 standard deviation for one standard deviation increase of interaction with

[20] Beta values are key indicators of relationships, resulting from the regressions that are standardised, the variances of dependent and independent variables in the regressions are 1.

neighbours, keeping all other factors constant (*ceteris paribus*). The estimates are similar in both poor and comparator areas. Details of the estimates can be found in Table C.1.

The overall relationship between trust and social class markers (income and 'living period') seems significant and positive. The relationship between trust and income is very strong compared to the relationship with living period. Trust in relatives increases by .97 standard deviation for one standard deviation increase of income, whereas it increases only .16 standard deviation for one standard deviation increase of 'living period', *ceteris paribus*. However, the effect is less in cases of trust in neighbours, particularly in poor areas. The 'living period' in a neighbourhood affects trust in relatives equally in areas; the effect in the case of neighbours is insignificant in poor areas.

6.2.1.2 'Looking after the house in absence'

Neighbours are generally trusted to take care of homes in the household's absence. Trust in relatives may be irrelevant to this situation as there may be no relative living nearby. According to the estimates, the effect of the size of network on trust is insignificant across networks. However interaction affects individual trust to some extent, particularly with neighbours. Trust in neighbours increases by .15 and .14 standard deviation in poor and comparator areas respectively if interactions increase by one standard deviation *ceteris paribus*. (However, the corresponding trust in friends decreases by .21 and .30 standard deviation, which may imply a general distrust in friends). Details on the estimates are presented in Table C.2 in Appendix C.

As expected, household income significantly increases trust in networks. According to the estimates, trust in neighbours increases by .78 standard deviation in poor areas for one standard deviation increase of income; this change is even higher in comparator areas *ceteris paribus*. The overall effect of income is generally lower in poor areas, where trust related to non-financial circumstance is less dependent on household income. On the other hand, the 'living period' has no significant influence on trust in networks, except in the case of neighbours. Even the parameter estimated for neighbours is not so significant in poor areas. Trust in neighbours increases by only .07 in poor areas, compared to .24 in comparator areas, if living period increases by one standard deviation.

6.2.3.1 Emergency help

The estimates for the volume of network are not statistically significant, but they are positive and statistically significant for interactions. Notably, interactions affect trust among neighbours; the estimate is even higher than for relatives. Details of the estimates are presented in Table C.2 in Appendix C. Trust increases by .15 standard deviation in neighbours, compared to .08 in relatives, for one standard deviation increase of interactions *ceteris paribus*. These estimates vary slightly from the findings revealed for the case of taking care of house in absence. The higher rate interactions influence the individual trust in neighbours less in poor areas than in comparator areas. (However, interaction significantly affects trust in relatives in poor areas.)

Household income has a positive and significant effect on individual trust across networks, but the effect is generally lower in poor areas. The effects on trust tend to be higher in the case of relatives and lower in the case of friends. Higher household income influences trust in relatives more strongly than it does with neighbours, particularly in poor areas. On the other hand, the 'living period' of household influences trust less – the effect is generally positive and statistically significant, particularly in the case of trust in relatives and neighbours. The beta-coefficients are .11 and .10 respectively; these imply a relatively weak relationship. However, the effect among neighbours is insignificant in poor areas.

6.2.3 Results: trust in civic organisations

According to OLS estimates, the linear relationship between trust in civic organisations and the number of organisations in contact is mixed. The parameters revealed are negative in the case of public service authorities such as the water supply and electricity supply authorities. However, a positive relationship is evident in the case of international NGOs. Again, the overall (combined) relationship between trust and connection differs. Hence, trust in the local municipality, police department, law court/justice department and international NGOs is highly significant in poor areas and increases with the number of connections (with persons linked with those organisations), though the overall relationship is insignificant. This means that households connected with those organisations trust the organisation more. For instance, trust in local government and international NGOs increases by .18 and .19 standard deviation, respectively, for one standard deviation increase of connections *ceteris paribus*.

The relationship between trust and interaction with civic organisations is also mixed. Higher interaction increases trust in the police, law court/justice department and local NGOs; conversely, it *decreases* trust in local government, the electricity supply authority, political parties and international NGOs. Both positive and negative relationships are statistically significant but small in magnitude, particularly in poor areas. Trust in local government decreases by 0.08 standard deviation for one standard deviation increase of interaction with it. However, the effect is largely insignificant in comparators areas, except in the case of trust in police and law court/justice departments.

In general, the relationship between trust in civic organisations and household income is positive, but the size of *beta* is much smaller (varying between .12 and .24 standard deviation) compared to that of a bonding network. This means that trust in civic organisations such as the police or law court/justice department is less affected by household income. However, trust in the electricity supply authority is substantially correlated with the household income. The relationship between trust in civic organisations and household income is small in magnitude in poor areas, compared to that of comparator areas (the highest difference in *beta* is observed in the case of the electricity supply authority). Trust increases by .19 and .30 standard deviation, respectively, for one standard deviation increase of income in poor and comparator areas *ceteris paribus*.

The linear relationship between trust in civil organisations and the 'living period' of households is largely insignificant. However, a negative relationship is evident in the case of local government and international NGOs; a longer period of living in the neighbourhood led to less trust in the organisations. The overall trust in local government and international NGOs decreases by .10 and .09, respectively for one standard deviation increase of living period. The estimates are particularly significant in the poor areas, which may suggest the growing distrust of poor households in those organisations. Nonetheless, a positive relationship is evident in the case of the water supply authority, where trust increases by .10 standard deviation in poor areas for one standard deviation increase of living period.

6.3 Discussion

The relationships between bonding network structure and trust under three situations may partly demonstrate theoretically expected manifestation of social capital. The size of

network does little to help in trust, but interaction helps regardless of the situation; it is particularly appropriate to the case of trust in neighbours. Moreover, interaction is more useful in the case of trust in financial transactions among the urban poor. However, the lower *beta* values for trust in neighbours in poor areas may imply that social trust and reciprocity are generally high in deprived urban neighbourhoods. A possible interpretation might be that, in poor areas, everybody knows their neighbours' business – there is complete transparency. The poor do not have to 'interact' to know what is going on with their neighbours. Also, the poor livelihood (in poor areas) might inflict an implicit trust among neighbours which forces general norms of social behaviour. However, the volume of network has little to do with building trust in neighbours (or other networks) regardless of the situation (financial, non-financial or emergency).

Secondly, the strong relationship between income and trust across networks, situations and study groups is theoretically expected as higher social class would facilitate social capital. Such a relationship is expected to be even stronger in financial transactions among the urban poor. However, the effect of income on trust in neighbours is less in poor areas. The insignificant relationship between living period and trust invites an argument of measurement. It may be that the effect is nonlinear, with first an increasing effect and then, for a very long period of residence, a decreasing effect. Long-standing residents may be the unsuccessful, failing poor. The findings in the context of study population may contradict the theoretical relationship between social class and social capital.

Trust in civic organisations generally increases with higher bridging networks in poor areas. The connection perhaps provides access to information about those organisations that is useful in receiving services. Since the poor are largely uneducated or little educated, connection with bridging networks presumably means to services which increase trust (Cameron, 2010; Braun and Aßheuer, 2011). However, higher interaction may not be necessary to gain access to services, but may imply the weak ties of bridging and linking networks (Hauser et al., 2007). The findings entail that more bridging and linking contacts might lead to economic gains.

The relationship between trust in civic organisations such as police and law court/judiciary departments and household income may contradict the theoretical proposition of social capital because the relationship is weaker in poor areas. This means that household income (which is related to individual's social class) becomes less relevant in bridging networks. Despite the fact that services from public organisations are

delivered to all citizens equally regardless of economic condition, the finding underlines differential trust levels in relation to household income between the two study groups.

It is not clear whether household trust in civic organisations increases with a longer living period. Yet a longer period of living in a neighbourhood may be significant in that it may facilitate urban livelihood (e.g. providing options for accessing water, electricity, etc.). Nevertheless, the negative relationship in the cases of local government and international NGOs may imply that new migrants in urban low income neighbourhoods still rely on those organisations.

In conclusion, understanding of social trust relies much on the broader societal context. It implies that there are issues of units (spatial boundaries) for measuring trust. Also, individual trust in a network is subject to nonlinear relationships with the social and economic factors of individual households as well as of the group. This means that the measure of individual trust is influenced by households and neighbourhoods. Nonlinear relationships among variables can be investigated by structural analysis. A structural analytic approach is offered in chapter 7, but first we analyse the particular trust in *neighbours* using few additional variables including city type, community category, MFI membership and risk associated with housing tenure. Since the dependent variable, the degree of trust, is ordinal, we use ordered Logit and Probit estimations to give a more reliable prediction of the relationship. The estimates of two models are expected to provide similar results on relationship between dependent and explanatory variables.

6.4 Trust in neighbours

As in the earlier estimation, the perceived level of trust (lowest to highest) in neighbours among the poor is only known when it crosses the thresholds. This means there are 10 ranks and 9 thresholds in the order of trust in neighbours (see the previous section on analytical framework). If ω_i^* is the single latent variable (which is unobserved), the Logit or Probit model can be expressed as below:

$$\omega_i^* = \mathbf{X}_i'\beta + u_i \qquad (6.2)$$

That means, $\omega_i^*$is continuous between any number among lowest and highest thresholds of trust. If the probability that observation i will select j alternative, the function can be written as below:

$$p_{ij} = p(y_i = j) = p\left(\alpha_{j-1} < \omega_i^* \leq \alpha_j\right) = F\left(\alpha_j - \mathbf{X}_i'\beta\right) - F\left(\alpha_{j-1} - \mathbf{X}_i'\beta\right)$$

Given that $\omega_i = j$ and $\alpha_{j-1} < \omega_i^* \leq \alpha_j$, where α is said to be cut-off values between two ranks (level of trust). Here a slight difference between Logit and Probit models is noted. If F is logistic cumulative density function (cdf), $F(z) = \frac{e^z}{(1+e^z)}$ in *logit* model, which is normal *cdf* in *Probit* model.

Each of the models with j alternatives will have one set of coefficients with $(j-1)$ intercepts and j marginal coefficients. The marginal effect of an increase in a regressor x_r on the probability of i selecting j is

$$\frac{\partial p_{ij}}{\partial x_{ri}} = \left\{F'\left(\alpha_{j-1} - \mathbf{X}_i'\beta\right) - \left(\alpha_j - \mathbf{X}_i'\beta\right)\right\}\beta_r \qquad (6.3)$$

Therefore, the sign of parameter β in equation 6.2 indicates the probability of increasing or decreasing the level of trust for an increase of $\mathbf{X}_i'$. On the other hand, $\frac{\partial p_{ij}}{\partial x_{ri}}$ explains the likelihood of increasing or decreasing the probability that i will choose an alternative j in respect to x_r.

In this probability model, explanatory variables are: number of neighbours; frequency of contact with the neighbour; household income; assets; living period; risk of eviction; MFI membership (yes=1; no=0); community type (poor = 1; comparator= 0) and category of city (Dhaka = 1; Chittagong = 2; Kushtia = 3). Dependent variable has 10 categories—lowest 1 to highest 10. However, some of the categories may not be included in the estimation if responses to a category are not adequate. Using equation 6.2 and equation 6.3, the probability of increasing or decreasing the level of trust in neighbours is estimated in three cases: (1) lending money to neighbours; (2) looking after the house in absence; and (3) for emergency help. We can estimate the probability of increasing or decreasing trust in neighbours using Equation 6.2 and 6.3. The Logit and Probit estimates are presented in Table 6.1 and Tables C.5—C.7 in Appendix C. Details on the Logit and Probit estimates of coefficients and marginal effects can be found in the appendices C.6.1, C.6.2 and C.6.3.

6.4.1 Results

The coefficients of the Probit and Logit model are presented in Table 6.1. The intercepts (or thresholds) parameters and other details can also be seen in Appendix C. The coefficients differ by the scale factor, and therefore we cannot interpret the magnitude of the coefficient. We can only interpret the sign of coefficients, but can look at marginal effects for representative cases. According to the estimates, the coefficients of both models indicate the same direction, to the conclusion that it is likely that the level of trust in neighbours among the urban poor increases with higher frequency of contact, particularly in the cases of lending money and emergency help, with the risk of eviction (regardless of the three cases) and MFI membership (in the case of lending money). Conversely, it is likely that trust decreases with higher assets of poor households, particularly in the cases of lending money and emergency help. Moreover, it is likely that the level of trust is higher in the case of lending money if the city is smaller. However such a finding is contrary to the finding in the case of looking after the house, where level of trust is likely to be higher in a big city. Moreover, it is highly likely that the probability of trust in neighbours increases if the poor live in comparator areas. There is not a significant relationship between the probability of increasing or decreasing of trust in neighbours and the number of neighbours, income or living period.

Table 6.1: Probability of 'trust' in neighbours

(Dependent variable= Degree of trust)

Variables	Logit Model Coefficients (Equation 6.2)			Probit Model Coefficients (Equation 6.2)		
	Lending money	looking after house	Emergency help	Lending money	Looking after house	Emergency help
Number of neighbours	-.01	-.01	-.02*	-.01	-.01	-.01
Freq. of contact	.27***	-.03	.21***	.15***	-.01	.12**
(Log) income	-.04	-.17	-.08	-.02	-.10	-.06
(Log) asset	-.14***	.01	-.08**	-.08***	.00	-.04***
Living period	-.02	.03	-.04	-.01	.00	-.02
Risk of eviction	.07**	.25***	.10***	.04**	.14***	.06***
Microfinance membership (yes=1; no=0)	.27**	-.21	.08	.16**	-.12	.05
Community type (poor=1; comparator=0)	-.50***	-1.03***	-.47***	-.28***	-.54***	-.27***
Category of city (Dhaka-1; Chittagong=2; Kushtia=3)	.16**	-.23***	-.03	.09**	-.11**	-.02
N	*1545*	*1571*	*1572*	*1545*	*1571*	*1572*
Pseudo R^2	*.02*	*.03*	*.01*	*.02*	*.03*	*.01*

6.4.2 Marginal effects

6.4.2.1 Trust in lending money[21]

According to the estimates revealed by Equation 6.3, one unit increase in frequency of contact with neigbours is associated with being 1% more likely that the household will choose trust level 9; 4% more likely of choosing level 10, and 4% less likely of choosing trust level 8 (Table C.5, Appendix C). Again, one unit increase of 'risk of eviction' of housholds is associated with being approximately 1% more likely of choosing trust level 9 or 10. MFI membership is associated with being 4% more likely of choosing trust level 10, and 4% less likely of choosing trust level 8. Again, poor neighbourhoods are associated with being 6-7% more likely of choosing trust level 8, and 7% less likely of level 10 (details of the estimates can be found in Appendix C).

The marginal effects of the number of neighbours, income and living period on trust are zero. This means there is no association between those variables and likelihood of increase or decrease of trust in neighbours.

6.4.2.2 Trust in looking after the house[22]

According to estimates (refer to Table C.6), one unit increase of 'risk of eviction' is associated with being 3% more likely of choosing trust level 10 and 2% less likely of choosing trust level 9. Poor neighbourhoods are associated with being 3% more likely of choosing trust level 8, 9% more likely of choosing level 9 and 13% less likely of choosing level 10. Living in a small city is associated with being 1% more likely of choosing trust level 8, 2% more likely of choosing level 9, and 3% less likely of choosing level 10. The marginal effects of number of neighbours, frequency of contact with neighbours, MFI membership and other variables on trust are zero, as estimates revealed.

6.4.2.3 Trust in emergency help

One unit increase in frequency of contact is associated with being 4% more likely that a household will choose trust level 10, 1% less likely of choosing trust level 7 or 9, and 3% less likely of choosing level 8 (see Table C.7). Again, one unit increase of risk of eviction

[21] Probabilities of choosing trust thresholds 7, 8, 9 and 10 are respectively .02, .19, 61 and 18
[22] Probabilities of the poor's trust level 9 and 10 in neighbours is .84 and .11 in the case of looking after house.

is associated with being approximately 2% more likely of choosing trust level 10 and 1% less likely of choosing level 8. The poor neighbourhood is associated with being 2-6% more likely that the household will choose trust level 8 and 9, and 9% less likely of choosing trust level 10. All other marginal coefficients are insignificant.

6.4.3 Discussion

The above findings would imply that trust in neighbours relies largely on social factors such as frequency of contact, risks of eviction and group (MFI) membership, rather than economic factors such as income and assets. The findings might also imply that the urban poor in small cities are more likely to trust their neighbours, particularly for financial transactions (e.g. lending money and emergency help). However, higher trust in neighbours in big cities regarding 'looking after the house' may rather indicate higher dependency of the poor for nonfinancial cooperation on neighbours. The relationship between trust and insecurity of tenure (risk of eviction, which is higher in poor areas) may mean that trust is higher among neighbours in poor neighbourhoods. In addition, higher trust in comparator neighbourhoods would imply the importance of security of tenure for building neighbourhood trust. Effects of socioeconomic factors on trust in neighbours are to some extent similar in financial cases (the cases of lending money and emergency help) which vary with effects in non-financial cases.

6.5 Conclusion

Frequent social exchange is crucial for building particularised trust, especially among neighbours in poor communities. This trust relies on a number of social and economic factors. Factors exhibiting household characteristics as well as reflecting on established social norms and culture influence individual trust levels. This implies that the poor are more likely to trust their neighbours. Such trust is an outcome of social transactions. Trust in civic organisations relies more on macro social structure (e.g. state institutions, rules of law), and forms of governance within a broader social context rather than in a micro social institution (e.g. a neighbourhood). It may imply that higher civic trust is expected in a society where rules of law are established, and institutional governance is well functioning. Particularised and civic trust are less influenced by individual household characteristics across networks of the poor. However, a longer period of living could perhaps facilitate strong social relations and thereby increase trust. This could suggest

that insecurity of tenure potentially disrupts trust, as such social capital in poor neighbourhoods.

Chapter 7: The Behavioural Outcome of Social Capital: Cooperation

7.1 Introduction

The definition of social capital assumes cooperation as the tangible form of outcome, with the potential to mobilise economic resources for an individual or group in a society. As defined, social capital is 'network structure', with shared norms and values which potentially yield social virtues such as trust and cooperation (ABS, 2006). Such social virtues could have potential implications in areas such as health, education, employment and family wellbeing, thus fostering community strengthening (see Section 2.2, Chapter 2). Financial exchanges can be a form of cooperation, and such exchanges, or lending cooperation, have been measured in several empirical studies on cooperation (DeSteno et al., 2010; Jackson et al., 2012; Bouma et al., 2008). Non-financial transactions might also represent a way of understanding cooperation.

In this chapter, we analyse the relationships between cooperation and major variables linked to different aspects of social capital based on data obtained from the study population. The organisation of the chapter is as follows: Section 7.2 explores the (linear) relationships between cooperation measures and other variables (trust and some socioeconomic characteristics of households) across networks. Such relationships might indicate the dependency of cooperation on different aspects of social capital. Section 7.3 explores the structural relationships between individual cooperation (among neighbours in particular) and the broader socio-economic context. This exploration of non-linear relationships may provide a better understanding of social cooperation.

7.2 Cooperation across networks

7.2.1 Analytical framework

The dependent variable, 'degree of cooperation', varies across households, depending on socioeconomic circumstances and the need for cooperation. An equal amount of financial cooperation may provide varied degrees of cooperation across households. Such grounds may provide a rationale for considering the amount of money borrowed in the past as an explanatory variable for measuring cooperation. Further, let us assume that the level of trust (perceived over the past action, e.g. borrowing money) is an explanatory variable factor in the current perceived degree of cooperation. Equally, the *amount of financial cooperation* received from a network is assumed to be an indicator of the extent of the household's trust. The act of borrowing money happened in the past, and is viewed as a lagged measure of trust.

Financial cooperation may require a certain level of trust among networks (Putnam, 1995; Fukuyama, 1996) The requirement of trust is perhaps lower in non-financial cooperation. However, such trust is based on past experiences of reciprocal financial and non-financial transactions and other socioeconomic factors. Thus social transactions and building trust are influenced by short living period, which is also linked to poor socioeconomic conditions.

Moreover, poor income may also restrict financial transactions. However, this may create the conditions for non-financial transactions, which are necessary for vulnerable and interdependent livelihoods of the urban poor (see Chapter 4). It may also involve the effects of class on social capital; more on this argument can be found in Chapters 2 4 and 5, and in Appendix B on understanding socioeconomic vulnerability. Nonetheless, there is an assumption that a higher social network structure yields higher cooperation[23] (see Chapter 2 for details).

A positive relationship is expected between individual cooperation and social network, amount of financial cooperation, degree of trust, income and living period. Again, in the case of bridging/linking networks, a higher network is expected to provide access to higher economic resources, though higher interactions may not facilitate yields (see Chapter 2). Moreover, the relationship between cooperation and income is expected to be

[23] Interactions with bonding networks (particularly with neighbours) positively affect trust (see Chapter 6).

insignificant. However, a significant relationship between cooperation and living period in a place is expected.

The respondents were asked to state whether they had borrowed money from any networks during the past year.[24] The follow-up question was, *What was the degree of cooperation perceived from the amount borrowed?* The responses were recorded on a 7-point Likert-scale; a higher score represents a higher level of cooperation (see Chapter 3 for details).

A similar logic is applied to predict the perceived degree of nonfinancial cooperation from the networks. However, this differs in that the dependent variable 'degree of cooperation' is replaced by the 'number of non-financial cooperations' received over the past year, assuming that higher incidence of cooperation is a reflection of higher magnitude of cooperation. The respondents were given a list of common cooperations presumed to be happening in urban poor neighbourhoods.[25] One point is assigned on receiving each incidence of cooperation.

Assume that i is a member of a neighbourhood $g_{(i)}$. ω_i is any financial or non-financial cooperation perceived by observation i from j network which is linearly dependent on some socioeconomic variables $\mathbf{X}_i$ and network structureSN_i, the function can be written as below:

$$\omega_i = \mathbf{c}\mathbf{X}_i + J \quad SN_{g(i)} + \varepsilon_i \qquad (7.1)$$

The linear relationships between the dependent and explanatory variables can be tested using Ordinary Least Square (OLS) estimation. The estimates are in standardised *Beta* values and presented in Table D.1, Table D.2 and Table D.3 in Appendix D.

[24] This is particularly asked to understand the extent of financial cooperation happening with the bonding networks in poorer neighbourhoods.

[25] Getting by in the neighbourhood, solving social problems, negotiating utilities, receiving legal support, getting a job, receiving health care, getting into the neighbourhood, receiving public services/social security, and in other ways.

7.2.2 Cooperation from the bonding networks

7.2.2.1 Financial cooperation

The overall relationship between financial cooperation and trust across networks is positive, specifically in the case of cooperation among relatives. However, these types of relationships are weaker in poor areas compared to comparator ones. According to OLS estimates, cooperation from relatives increases by .18 standard deviation in comparator areas compared to a .08 standard deviation increase in poorer areas given one standard deviation increases of trust *ceteris paribus*. Moreover, this relationship is not positive across networks in poor areas. Details of the estimates can be found in Table D.1.

The relationship between cooperation and the amount of money received in the past is positive but small in extent. The relationship is highly significant only in the case of friends in poor areas, where the perception of cooperation increases by .30 for one standard deviation increase of amount of money. However, this relationship is insignificant in the case of neighbours in poor areas.

The nature of relationships between cooperation and the size and strength of networks are dissimilar. A significant relationship between network size and cooperation is evident in the case of neighbours; cooperation increases by .26 standard deviation if the number of neighbours increases one standard deviation. However, this relationship is particularly insignificant in the cases of relatives and friends. On the other hand, the relationship between frequency of contact and cooperation is generally positive, except in the case of neighbours in comparator areas. In poorer areas, one standard deviation higher interaction increases the financial cooperation by .28 and .15 standard deviation in the cases of relatives and neighbours respectively.

A consistent positive relationship between household income and cooperation is evident across networks. It may imply that an increased income of the poor rises in line with the perception of cooperation. This relationship is consistent with the case of cooperation from relatives and neighbours; one standard deviation change in household income increases cooperation by .22 standard deviation in cases of relatives and neighbours. However, such a relationship is weaker in both cases in poorer areas than in comparator areas.

The relationship between period of living and cooperation is positive, particularly in the case of relatives and neighbours. Cooperation among relatives and neighbours increases by .15 and .08 standard deviation respectively for one standard deviation increase of living period. Such a relationship is particularly significant in poorer areas, where one standard deviation increase of living period raises cooperation among relatives and neighbours by .14 and .13 standard deviation respectively.

Discussion

The estimates suggest that higher trust could facilitate financial cooperation among the poor (although this is not the case between friends). It could substantiate the previous finding that financial cooperation between relatives and neighbours is more substantial in terms of amounts of money and incidences than other bonding networks (see Table D.1), which might indicate the interdependent livelihood of the urban poor.

Although a certain level of trust is called for in the case of cooperation among relatives, this is not as high as with neighbours. A close and transparent relationship with neighbours may engender a level of implicit trust. Alternatively, it might imply that relatives of the poor are unable to cooperate on financial matters. Consequently, the poor tend to rely largely on their neighbours for this type of cooperation. Such reliance is perhaps necessary for the poor. Mutual interdependence and frequent exchanges may imply that there is implicit trust among the poor which may have implications for collective efforts in livelihood development.

There is little evidence that the amount of money from relatives and neighbours affects cooperation. Such a finding would perhaps be consistent with the previous paragraph, which underlines that trust is less important in cooperation, particularly in poorer areas. This analysis backs up preliminary findings that relatives and neighbours are important in poorer areas (see Chapter 5).

Generally, the size of a network has few implications for financial cooperation, though a greater number of neighbours is more meaningful. However, interactions with relatives and neighbours seem particularly important in poorer areas. The findings are similar to evidence revealed in Chapter 6, in which interaction significantly affects trust.

Paradoxically, the variable of household income always seems to have a positive correlation with financial cooperation. That means that the higher-income poor experience more cooperation. However, this relationship is generally weaker in poor areas

than in comparator ones, which may suggest that the poor in slums have a cooperative social value orientation regardless of socioeconomic challenges.

Generally, longer periods of living in a place pay off, with a higher degree of cooperation from either relatives or neighbours, since there will have been more social exchanges, particularly with neighbours, and these are important in financial cooperation.

7.2.2.2. Non-financial cooperation

The overall relationship between trust and non-financial cooperation is insignificant across different networks. However, a statistically significant but weaker relationship is evident in the cases of relatives and neighbours in poorer areas. This relationship is insignificant in the case of friends in either sample.

The relationship between the amount of money and non-financial cooperation is insignificant in the cases of relatives and neighbours particularly in poorer areas. However, significant positive relationships are evident in the case of friends and neighbours in the comparator areas sample. Cooperation increases by only .09 and .15 standard deviation respectively for one standard deviation increase in amount of money in the cases of friends and relatives in comparator areas.

Negative and significant relationships are evident between sizes of network (relatives or neighbours) and non-financial cooperation. However, a positive and statistically significant relationship is evident in in comparator areas, where cooperation increases by .24 and .08 standard deviation respectively for one standard deviation increase in size. However, such relationships are statistically insignificant in poorer areas. The relationships between interaction and cooperation are negative and significant in the cases of relatives and friends. It may be that non-financial cooperation requires less trust requiring interactions. However, a small but statistically significant relationship is evident in poorer areas, where cooperation increases by .05 for one standard deviation increase in interaction with neighbours.

Again, a consistent and significant positive relationship between household income and non-financial cooperation is evident across different networks. However, the magnitude of the relationship can be reduced in non-financial cooperation compared with financial cooperation. For one standard deviation increase in income, non-financial cooperation

rises by .04 in neighbours and .06 in relatives. However, these relationships are insignificant in poorer areas.

The relationship between living period (length of time in a place) and non-financial cooperation is insignificant in the cases of relatives or friends. However, a significant relationship is evident in the case of neighbours. One standard deviation increase in living period increases overall cooperation by .11 standard deviation. However, this type of relationship is weaker in poorer areas than in comparator ones. Lengthier periods of living in a place seem useful for higher cooperation among the poor.

Discussion

Trust seems important to non-financial cooperation in the case of neighbours, but less so in the case of relatives. These findings might substantiate the theoretical proposition that trust is crucial for social transactions. Yet it contrasts with the previous findings that trust has little effect on financial cooperation. However, the findings might imply that non-financial cooperation is more common in poorer neighbourhoods.

The insignificant relationship between money and non-financial cooperation underlines the non-monetary nature of transactions in poor neighbourhoods. This finding might establish the social value orientation of the urban poor. Economic hardship may restrict financial cooperation among the poor; however, non-financial cooperation is always welcomed.

Network size has no significant effect on non-financial cooperation in poorer neighbourhoods, and this is consistent with previous findings on financial cooperation. However, these findings may to some extent contradict the proposition of social network theories that assume that higher networks lead to greater economic gain (Ziersch et al., 2005a; Knack and Keefer, 1997b). But such a proposition is held to an extent (and also substantiates the preliminary findings of Chapter 5), since interactions with neighbours facilitate non-financial cooperation.

The reduced impact of income on non-financial cooperation among the poor may imply that the poor are cooperative regardless of their socioeconomic challenges. Much of the cooperation common among the poor requires no financial guarantee, but is important to their livelihoods.

The significant effect of living period on non-financial cooperation among neighbours only underlines the importance of security of tenure in developing the livelihoods of the urban poor. This could facilitate both financial and non-financial cooperation among poorer neighbours (as well as relatives).

7.2.3 Cooporation from bridging/linking networks

The bridging and linking networks provide access to information or opportunities to the lower end of the network, and so the question is of how useful they are (Levin and Cross, 2004; Molm et al., 2000). For instance, we may not particularly trust politicians, but we realise that they can be useful. So the assumption is that the relationship between individual cooperation and trust in a particular bridging/linking network is weak. Thus, the variables of trust and amount of money are absent from Equation 7.1. The number of non-financial cooperations received from bridging and linking networks is regressed on the network structure, income and living period. The OLS estimation results are presented in Table D.3 in Appendix D.

Cooperation is expected to increase with networks' structure. Bridging and linking networks connect people from different socioeconomic backgrounds. The effect of income (one marker of social class) may be strong as well, since those with a higher income (social class) are better able to exploit networks. This is also evidence from our preliminary analysis that the poor have limited access to bridging networks (see Chapter 5). Moreover, a longer period of living in the same place is expected to affect cooperation from bridging networks, since it helps strengthen ties to particular areas.

According to the estimate, the overall relationship between network size and cooperation is insignificant across different networks. Stronger ties with political involvement, businessmen, public institutions or NGOs do little to increase cooperation. However, a higher-level network with professional and voluntary organisations increases cooperation by .13 and .22 standard deviation respectively, particularly in comparator areas. Interaction significantly increases cooperation, especially if it is with political parties, relatives who are involved in politics, professionals and public and voluntary organisations. The effects are generally greater in poor areas than in comparator areas. Cooperation from professional and voluntary organisations increases by .21 and .37 standard deviation in poor areas, compared with .13 and .30 in the comparator sample,

for one standard deviation increase of interactions. However, the effect is less apparent when it comes to political parties.

The relationship between income and cooperation was found to be largely insignificant among the study population. However,weak but significant relationships are evident in the cases of cooperation from businessmen, voluntary organisations and NGOs where household income is positively correlated to cooperation; the parameters vary between .04 and .08 standard deviation for one standard deviation increase in income.

The relationship between period of living and cooperation is largely insignificant across the networks. That neither of these estimates is statistically significant may imply that it does not affect cooperation much.

Discussion

The insignificant relationship between cooperation and size of network might imply that gaining access to, or exploiting, an effective network is not easy for the poor members of the study group. However, greater interaction suggests meaningful cooperation. This could partly substantiate the theoretical proposition that suggests greater interaction means stronger networks that can help to realise economic gains.

The insignificant relationship between cooperation and income is perhaps in line with general expectations; however, it contrasts with the previous findings that the effect of income on cooperation is consistent across the bonding networks. Nevertheless, higher income facilitates cooperation from local businessmen, NGOs and local government officials. Finally, such a finding is not completely unexpected; the gain from a bridging network is largely one-directional, since this type of network helps divert resources from someone of a higher social class to someone from a lower class. However, the person of higher class might also benefit from social recognition which helps to control the distribution of income and wealth. This means that the individuals at the bottom benefit, while the giver maintains their social status by way of their generosity. This kind of social relationship does not necessarily require trust or reciprocation.

7.2.4 Interim conclusions on cooperation across networks

The relationship between cooperation (either financial or non-financial) and trust varies widely across bonding networks. However, the extent of cooperation among neighbours in poor areas is rather different from that of other networks. The interdependent

livelihoods of the poor plausibly incur some implicit (or explicit) trust that helps facilitate cooperation. Such a distinctive form of social virtue could substantiate the theoretical proposition that socioeconomic and cultural homogeneity (or shared adversity when living in close quarters) of a group yields higher cooperation. This social virture might have implications for strengthening community as well as for fostering social wellbeing.

Cooperation among neighbours in poor areas relies on mutual relationships and previous exchanges. It means that a secure neighbourhood is crucial for interpersonal ties and cooperation. Such social ties are important for generating social capital.

The strong relationship between cooperation and income lies in line with the effect of social class on social capital. However, less variance in income, and a weak relationship in the case of poor neighbourhoods, particularly with cooperation among neighbours, might imply the effectiveness of collective efforts among the urban poor. It is plausible that this effectiveness is realised over a long period, since it implies that income and tenure securities are crucial to social cooperation in poor neighbourhoods.

Theoretically, cooperation is a form of social capital. However, individual cooperation depends on various social and economic factors, which means that the relationships between cooperation and socioeconomic factors are more complex and depend on a broader social context. The ways in which factors affect each other is thus a general concern in understanding social cooperation. They might be influenced by individual goals *as well as* by expectations of others. This means that some factors may directly affect individual cooperation, whereas other factors may affect cooperation in indirect ways. Such structural issues are addressed in detail in the following section.

7.3 Cooperation among the neighbours: a structural analytic approach

This section aims to explore non-linear relationships among different aspects of social capital. More precisely, it looks at how individual cooperation (the outcome of social capital) is influenced by household and neighbourhood characteristics. Because of the abstract construct of social capital, a structural analytic approach is employed in data to explore the relationships between socioeconomic variables associated with social capital. This approach is expected to illustrate more clearly how different aspects of social capital may influence each other.

The relationships between individuals' perceived degree of cooperation from a neighbour and social capital measures such as network structure and socioeconomic factors[26] are investigated within the theoretical context of social capital. However, the initial theoretical models are modified on the basis of test results to imply a best plausible relationship among different aspects of social capital in the context of Bangladesh's urban poor.

The theoretical proposition of social capital is contingent on *social class* (Bourdieu, 1986; Lin, 2001). It could imply that several socioeconomic factors of a household underlie the formation of social capital, because those factors indicate social class, which is responsible for cultural distances between groups. Such differences in class and culture affect decision-making and behaviours at group as well as individual level (Akerlof, 1997), so are important to an understanding of individual cooperation. The socioeconomic opportunities and challenges that define a group (e.g. social class), in which individual cooperation is reflected, provide a basis for the understanding of the formation of social capital (Guiso et al., 2006). Social capital is associated with the social position and power endowed with economic capital (Fine, 2001). Thus, socioeconomic factors provide a meaningful context in which to understand individual cooperation.

In line with the previous argument, the development of social capital takes time and resources; those with higher quantities of economic capital are in a better position to generate higher social capital, except that those in higher socioeconomic positions tend to be busier with work and other commitments and have less time to interact with their neighbours. This means that the network structure (the volume and frequency of contact with a neighbour) depends on social and economic factors since these factors characterise the household and group. Bourdieu (1986) describes social capital as the "circumstances in which individuals can use membership in groups and networks to secure benefits" (reported in Johnson et al., 2003: 34). Important to Bourdieu's understanding of social capital is that the size of social capital generated depends on features of the social network and the volume of social capital which already exist in it.

[26] The investigation is made in the case of cooperation among *neighbours* since the urban poor are found to maintain networks which are useful for their daily livelihood largely with neighbours (see Sections 5.1 and 5.3 for details). Though relatives represent another useful bonding network for the urban poor, this cooperation does little to follow the proposition of social capital theories, e.g. greater cooperation does not require greater interaction.

Direct associations between behavioural outcomes (trust and cooperation) and socioeconomic factors are evident (see Chapter 6). However, some factors are not directly responsible but *indirectly* influence individual behaviour and so are significant in understanding the social capital (Ziersch et al., 2005a; Van Deth, 2003). In this section, both direct and indirect factors linked to cooperation are explored and discussed; it investigates the close *as well as* the distant relationships affecting individual behaviour.

Consideration of individual cooperation as a function of only exogenous factors (while analysing individuals as members of a group) might limit the perspective in understanding the relationship between individual behaviour and associated factors (Manski, 1993; Manski, 2000; Sampson et al., 2002). Thus, individual cooperation is assumed to depend on a group's shared norms and values (defined by the endogenous socioeconomic factors of individuals).

The influence of 'endogeneous' group factors (e.g. the group's social vulnerability, norms of trust and cooperation) which are constructed and reconstructed by backward and forward feedbacks between individual and group characterstistics, is important to the analysis of individual cooperation. The previous section has discussed details of socioeconomic opportunities and challenges attributed to socioeconomic potential and the vulnerability of the study population. The uncertainty of income and limited assets contribute to the 'poor' group's higher social vulnerability compared with that of the 'comparator' group (see Table 5.1.1 columns 5 and 7). These endogeneous factors are discussed in the literature using terms like 'social norms', 'peer influence' and 'neighbourhood effects'(Cialdini and Trost, 1998; Reno et al., 1993; Hollander, 1964; Maxwell, 2002; Bauder, 2002; Goux and Maurin, 2007). So the effects of a group's shared norms and values are important to revealing a critical perspectiveof the analysis of individual cooperation.

Section 7.3.2 sets out a framework for analysis that could explore the direct and indirect relationships between individual cooperation and the aspects of social capital. Section 7.3.3 presents the results obtained from the two models. In section 7.3.4 we analyse the relationships among variables that best fit with the data and inform the initial theoretical models for potential modification. Finally, we draw a conclusion based on our findings.

7.3.1 Analytical framework

Three kinds of effects are discussed in the literature of social interaction and social capital (Manski 1993; Durlauf (2002); Glaeser et al., 2002). First, there are some effects caused by endogenous factors of individuals which differentiate individual and group behaviour. Secondly, there are also some effects caused by exogenous factors of groups which influence the individual behaviour. This effect is known as contextual (neighbourhood) effect and has been discussed in detail in Chapter 3. So the exogenous characteristics of a group are supposed to *directly* affect individual behaviour, whereas the endogenous (group defining characteristics) factors affect it *indirectly*. Moreover, there are other effects called *correlated* effects. Individuals in a group tend to behave similarly because they share some similar observed (and unobserved) characteristics. Therefore, the individual's orientation to social cooperation is not straightforward, calling for a structural solution to the problem.

7.3.1.1 Exchangeability errors and identification of the models

Though Manski's concept is used to understand the three effects, the analytical framework follows Durlauf (2002) article, *On the empirics of social capital,* which addresses the concerns of contextual effects specifically in the measurement of social capital. According to Durlauf, there are two fundamental concerns associated with measuring social capital: *exchangeability* and *identification*. A contextual effect is similar to the neighbourhood effect. The idea of 'context' is assumed to mean the social boundary that may cross the physical boundary of neighbourhood (Blalock, 1984). A contextual effect may be defined at city level, assuming that socioeconomic variations across cities are significant and influence the poor in the selection of both the city and the neighbourhood. These choices are significantly affected by socioeconomic processes and are influenced by income and assets, childhood achievements, social norms and social exclusion (Buck, 2001; Overman, 2002; Galster, 2007; Friedrichs et al., 2010; Blalock, 1984; Sampson et al., 2002; Manley et al., 2013). The causes, manifestations and outcomes of social capital are so interrelated that the relationships among them are often misleading. Such interrelationships often lead to exchangeability and identification problems. Details of the sources of these problems can be found in Durlauf's article.

Exchangeability

The structural model presupposes that the variables under study possess 'conditionally exchangeable errors'. This kind of exchangeability error arises from the indistinguishable error structure (where the error cannot be distinguished in the model) or if there is no clear way of separating variables because of more than one dependent variable. In this context, the partial exchangeability of errors of one equation affects the vector of parameters in another equation. Suppose that F_i information is available on each of the i study households and that each of the observations follows a linear structural form:

$$\omega_i = \mathbf{Z}_i\gamma + \eta_i \qquad (7.2)$$

Where ω_i is any behavioural outcome of ith observation, $\mathbf{Z}$ is the vector of variables and γ is a parameter. Error $\eta_i$are said to be F_i-conditionally exchangeable given that

$$\Pr(\eta_1 = a_1, \dots, \eta_k = a_k | F_1 \dots F_I) = \Pr\left(\eta_{\rho(1)} = a_1, \dots, \eta_{\rho(k)} = a_k | F_1 \dots F_I\right)$$

$\rho(.)$ is any operator which permutes the *K* indices. If $\mathbf{Z}_i = \mathbf{Z}_j \forall\ i, j$, ω's are assumed to be partially exchangeable. This exchangeability violation leads to an inconsistency in the results, and there is limited scope to deal with this error unless the omitted variables can be identified or selection bias is eliminated (Durlauf, 2002).

Therefore, the exchangeability condition is perhaps necessary given the vagueness of the notion of social capital. This implies that the clear instruments that might account for the 'endogeneity' issues in the analysis of social capital are not guaranteed, nor can the unobserved heterogeneity be identified with confidence (Durlauf, 2002; Manski, 2000). These conditions do not meet the standards typically considered necessary for causal inference. The exchangeability error does cause a problem in interpreting parameters estimated, and provides no guarantee of causality in the regression analysis. However, it does provide a standard in the evaluation of comparable parameters in the model specified.

Identification of the Model

The identification of the model is another issue of concern when estimating the relationships among different aspects of social capital. The concern of identifying

endogenous and contextual factors which affect behaviour outcomes separately have been discussed in a number of articles (Durlauf, 2002; Brock and Durlauf, 2001; Manski, 1993; Andersson, 2001). The contextual effect on behavioural outcomes of social capital, in particular, has been discussed at length, notably by Durlauf (2002).

Suppose that i is a member of a neighbourhood, $g_{(i)}$, and the individual behavioural outcome (cooperation) for an observation i is linearly dependent on some variables. Suppose that $\mathbf{X}_i$ is r –dimensional matrix [of variables x_1, x_2, etc.] of observed variables that have *direct* effects on individual behavioural outcome ω_i. $\mathbf{Y}_{g(i)}$ is s-dimension matrix of exogenous group-level observed variables, which are known to be the contextual factors, *indirectly* affecting the individual behavioural outcomes (cooperation and trust), ω_i .$\mathrm{E}(\omega_{g(i)}|F_{g(i)})$ is the individual expectation of average choice of others (group-level average), is common across the individuals within a group, conditional to a set of information, $F_{g(i)}$. If the measure of social capital is $SC_{g(i)}$, the function can be written as below:

$$\omega_i = k + \mathbf{c}\mathbf{X}_i + \mathbf{d}\mathbf{Y}_{g(i)} + J_1\mathrm{E}(\omega_{g(i)}|F_{g(i)}) + J_2 SC_{g(i)} + \varepsilon_i \qquad (7.3)$$

Estimation of parameters of behavioural equations ($k, \mathbf{c}, \mathbf{d}, \ J_1 \ and \ J_2$) is now a concern. According to Durlauf, identification of the model can be achieved in situations: (i) when social capital is assumed to be pre-determined and (ii) when it is assumed to be co-determined. The identification in both situations largely depends on the dimensions of $\mathbf{X}_i$ (observed individual-level variable) and $\mathbf{Y}_{g(i)}$(observed group-level variables). The specifications of the models in two situations are discussed below under separate headings.

Model 1: Social capital is pre-determined

The predetermined social capital model supposes that social capital is determined by a set of observed variables. Exogenous factors are assumed to affect the outcome of social capital either directly or indirectly. In such a condition the error term ε_i in equation (7.4) is not correlated with the social capital [cov ($SC_{g(i)}, \ \varepsilon_i$)=0]. In addition, there is no linear

dependency among observed variables, $\mathbf{X}_i$ and $\mathbf{Y}_{g(i)}$.[27] Under such conditions the behavioural outcome of social capital can be determined by the following equation:

$$\omega_i = k + \mathbf{cX}_i + \mathbf{dY}_{g(i)} + J_1\mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right) + J_2\mathrm{E}(SC_{g(i)}|F_{g(i)}) + J_3\mathrm{E}(y_{g(i)}|F_{g(i)}) + \varepsilon_i \quad (7.4)$$

Although the group level endogenous factors [$\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right), \mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right)$ and $\mathrm{E}(SC_{g(i)}|F_{g(i)})$] are in a single equation (7.4), the identification of the model is non-trivial; however, it can be achieved under certain assumptions. It assumes that there is at least an element in the equation in which the group characteristic does not affect the individual characteristics. Then the model is identified by the reduced form (3SLS estimation), assuming that the individual characteristics are moderated by the instrumentals for the group average expectation which *indirectly* affects the individual social capital outcome (Bramoullé et al., 2009).[28] Identification is achieved under the strong assumption that the observed variables, $\mathbf{X}_i$, $\mathbf{Y}_{g(i)}$, are not *linearly* dependent. The necessary condition is that there is at least one element of each of $\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right), \mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right)$ and $\mathrm{E}(SC_{g(i)}|F_{g(i)}$ whose group characteristic does not affect the individual behavioural outcome, ω_i. Alternatively, the model is identified if at least $r + s + 3$ observed variables are available in the systems of equation, in which at least one variable in each equation is different from the main behavioural equation (see the discussion of (Durlauf, 2002)).

According to Equation 7.4, the individual behaviour depends on the observed characteristic $\mathbf{X}_i$ (household level variables) and $\mathbf{Y}_{g(i)}$ (that affect the group)**,** and the expected shared vulnerability $\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right)$, cooperation $\mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right)$ and trust $\mathrm{E}(SC_{g(i)}|F_{g(i)})$. Household characteristic ($\mathbf{X}_i$) includes 'income' of the household head, 'education' of the head, 'volume' of networks and 'frequency' of contact. (Please see Chapters 5 for how these variables could distinguish the two study groups and affect the

[27] This is a strong assumption indeed; variables can be predetermined but this does not necessarily mean that they are uncorrelated.

[28]The limitation of OLS is its downward bias in estimating the effects of endogenous explanatory variables, even when the households are randomly assigned (Caeyers B. (2014) Peer effects in development programme awareness of vulnerable groups in rural Tanzania. Centre for the Study of African Economics: Department of Economics, University of Oxford.

manifestation and outcome of social capital. These variables distinguish individual behaviour from average expectation of group behaviour). These variables are supposed to *directly* affect individual cooperation. Again, the group level observed characteristics $\mathbf{Y}_{g(i)}$ may include household assets, type of neighbourhood (poor = 1 or comparator = 0), membership of the microfinance institution (MFI) (member = 1, non-member = 0) category of city (Dhaka = 1, Chittagong = 2, Kushtia = 3), land ownership of the house (public = 1, private = 2) and neighbourhood expenditure (e.g. rent, utility bills). The way $\mathbf{Y}_{g(i)}$ distinguishes the groups at different levels has been discussed in detail in Chapter 4. These variables are assumed to *directly* affect the general expectation of group cooperation and trust. Note that trust varies with household income, and neighbourhood expenditure is not considered to be instrumental in the case of group trust (see Chapter 6). Group level expectations (on cooperation and trust) are assumed to *directly* (group cooperation) and *indirectly* (through group trust) affect individual cooperation. So, these are contextual effects, expected to vary on $\mathbf{Y}_{g(i)}$.

Some variables may have no direct relationship with the general expectation of group cooperation, with trust or with individual cooperation; rather, they are *correlated* with $\mathbf{Y}_i$. Such variables are assumed to predict the group characteristic $\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right)$, and *indirectly* affect group cooperation and trust. The risks of irregular income and eviction from the land, and the living period of households, are assumed to define social vulnerability of a group and are correlated to household assets (see Appendix B on social class markers). These variables account for group vulnerability and are assumed to partly account for the groups' behavioural variations. In the earlier chapter, correlations between income and assets, frequency of contact and group trust, and volume of network and group cooperation have been found to be significant, so are also assumed to be significant in the SEM model (Figure 7.1).

Therefore, the parameter **c** explains the variations of individual behaviour, directly influenced by observed characteristics, $\mathbf{X}_i$. Parameter **d** explains the contextual variations of individual behaviour influenced by observed group characteristics; $\mathbf{Y}_i$. J_1 [parameter accompanying group cooperation $\mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right)$] and J_2 [parameter accompanying group trust $\mathrm{E}\left(SC_{g(i)}\middle|F_{g(i)}\right)$] can explain the variations of individual cooperation influenced by expected shared norms of trust and cooperation of a group. Moreover, the parameter J_3 explains the variations of individual behaviour correlated to the group's social vulnerability $\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right)$.

Model 2: Social capital is co-determined

Suppose individual cooperation is co-determined with trust in neighbours. This means the individual behavioural choice, ω_i , and trust in neighbours, SC_i , are in a system of simultaneous functions determining the group's expected norms of cooperation $\mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right)$, trust $\mathrm{E}\ \left(SC_{g(i)}\middle|F_{g(i)}\right)$ and social vulnerability $\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right)$. The assumptions assume that individual behavioural choice is codetermined by the factors of trust in others in the group (Glaeser et al., 2002; Durlauf, 2002; Manski, 1993). Any effort an individual makes towards cooperation depends on various socioeconomic factors which directly and indirectly influence their behavioural choices. If an individual chooses some characteristics of social behaviours ω_i and SC_i, given the social vulnerability $\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right)$, expected group trust $\mathrm{E}\left(SC_{g(i)}\middle|F_{g(i)}\right)$and group cooperation $\left(\omega_{g(i)}\middle|F_{g(i)}\right)$, the nonlinear model of simultaneous equations can be expressed by the following two functions:

$$\omega_i = k + \mathbf{c}\mathbf{X}_i + \mathbf{d}\mathbf{Y}_{g(i)} + J_1\mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right) + J_2\mathrm{E}\left(SC_{g(i)}\middle|F_{g(i)}\right) + J_3\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right) + \varepsilon_i$$

$$SC_i = \bar{k} + \bar{\mathbf{c}}\mathbf{X}_i + \mathbf{d}\mathbf{Y}_{g(i)} + \bar{J}_1\mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right) + \bar{J}_2\mathrm{E}\left(SC_{g(i)}\middle|F_{g(i)}\right) + \bar{J}_3\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right) + \eta_i \quad (7.5)$$

If $\mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right)$, $\mathrm{E}\left(SC_{g(i)}\middle|F_{g(i)}\right)$ and $\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right)$ are linear functions of $\mathrm{E}\left(\mathbf{X}_{g(i)}\middle|F_{g(i)}\right)$ and $\mathrm{E}\left(\mathbf{Y}_{g(i)}\middle|F_{g(i)}\right)$, then identification can be achieved through second and third stage regression. This means that identification can be achieved in a similar way as discussed in model-I (pre-determined social capital). It means that at least three elements of $\mathbf{X}_i$ are not elements of $\mathbf{Y}_{g(i)}$ that provides an instrument for estimating $\mathrm{E}\left(\omega_{g(i)}\middle|F_{g(i)}\right)$, $\mathrm{E}\left(SC_{g(i)}\middle|F_{g(i)}\right)$ and $\mathrm{E}\left(y_{g(i)}\middle|F_{g(i)}\right)$. Identification is achieved by excluding group level analogues from individual characteristics.

In Equation 7.4, the hypothesis is that income, education of the household head, number of neighbours in contact, frequency of contact with neighbours and group cooperation directly affect individual cooperation. In addition, Equation 7.5 further hypothesises that individual cooperation is codetermined with the individual's degree of trust in neighbours. The trust that directly affects individual cooperation is also the result of a number of socioeconomic factors. This argument provides the basis to hypothesise that

group cooperation is affected by group trust, household assets, neighbourhood type, MFI membership, city category (based on economic primacy), land ownership of neighbourhood, neighbourhood expenses and the number of neighbours in contact with each other.

Another hypothesis, similar to model-I, is that group trust is related to the frequency of contact with neighbours, household assets, neighbourhood type, MFI membership, city category and land ownership. A further hypothesis is that household assets are linked to household income, and that they determine factors such as living period of household and risks of irregular income and eviction. The path diagram of the model is shown in Figure 7.2.

7.3.2 The results

Our estimations are based on the rationale specified in two models and the household-level data on *financial* cooperation among *neighbours* in the study population. The estimations explore the relationships between individuals' 'degree of cooperation' and the characteristics of the households and groups they belong to. The parameters explore three effects in the models: direct, indirect and correlated effects. The OLS, 3SLS and maximum-likelihood estimation methods have been applied to each of the models to predict linear and nonlinear relationships. The hypothetical relationships between different variables have been shown with the parameters in two schematic diagrams. Figure 7.1 presents the case of predetermined social capital, while Figure 7.2 presents the case of codetermined social capital. In the following section, three effects are discussed under separate headings based on the parameters estimated in two hypothetical models. In later stages, the hypothetical models are modified to estimate the robust relationships between variables. The estimates of the new models are presented in Table 7.2 and Table 7.3, and are analysed in the following discussion section. All estimates are in standardised *beta-coefficient*, and details of estimations can be seen in Appendix D.7.1.

7.3.2.1 Direct effects

According to the estimates of the models in Equation 7.4 and Equation 7.5 (shown in Figures 7.1 and 7.2), the *direct* relationships between individual cooperation and the number of neighbours in contact with each other, the household income and the formal education of the household head are statistically significant. In the case of predetermined social capital (Equation 7.4 and Figure 7.1), one standard deviation increase in number

of neighbours, income, and education increases cooperation by .33, .17 and .12 standard deviation respectively, *ceteris paribus*. Again, in the case of codetermined social capital (Equation 7.5 and Figure 7.1), the corresponding estimates are .31, .17 and .09 (the estimate of education is not statistically significant). The extent of the effects are more or less similar in both models. The other estimates, including those for group cooperation which is expected to directly affect individual cooperation, are not statistically significant in either case. Moreover, the magnitude of the parameter of 'individual trust' is statistically insignificant in the case of codetermined social capital. Details of the estimates of two models can be found in Appendices D.7.1 (A) and D.7.1 (B).

7.3.2.2 Indirect effects

There are some effects that are expected to be moderated by group cooperation, group trust and assets. Variables including neighbourhood type, MFI membership, neighbourhood expenses (e.g. rents and utility expenditures) and the number of neighbours in contact with each other; these are expected to indirectly affect individual cooperation through a group's general norms of trust and cooperation. However, neither estimate for group cooperation or trust is statistically significant. Each of the parameters affecting group cooperation is equally significant in both models (Equation 7.4 and Equation 7.5). However, the parameters of group trust and volume of neighbours are quite large at .33 and .71 respectively. Parameters influencing group trust can be seen in Figures 7.1 and 7.2.

The group's norms of trust are expected to indirectly affect individual behaviour (individual cooperation in the case of Equation 7.4 and individual cooperation and trust in the case of Equation 7.5). The parameters of frequency of contact, household assets, MFI membership and city category affecting group trust are statistically significant in both models. In fact, each of the three parameters is equally significant; however, the parameter of frequency of contact is highly significant, and varies between .69 and .96 in two models. This implies the necessary social interactions. The other estimates are insignificant in both models.

7.3.2.3 Correlated effects

Three variables that are expected to be linked with the behavioural outcomes of individuals are living period of household, risk of irregular income and risk of eviction

attributed to household assets; these are statistically significant in both models (Figures 7.1 and 7.2). The parameters (.39) are the same in both models, revealing that household assets are significantly related to living period. Additionally, the parameters suggest that having more assets decreases the risks of irregular income and eviction by .33 and .22 standard deviation. Nonetheless, the relationship between household income and assets is significantly correlated.

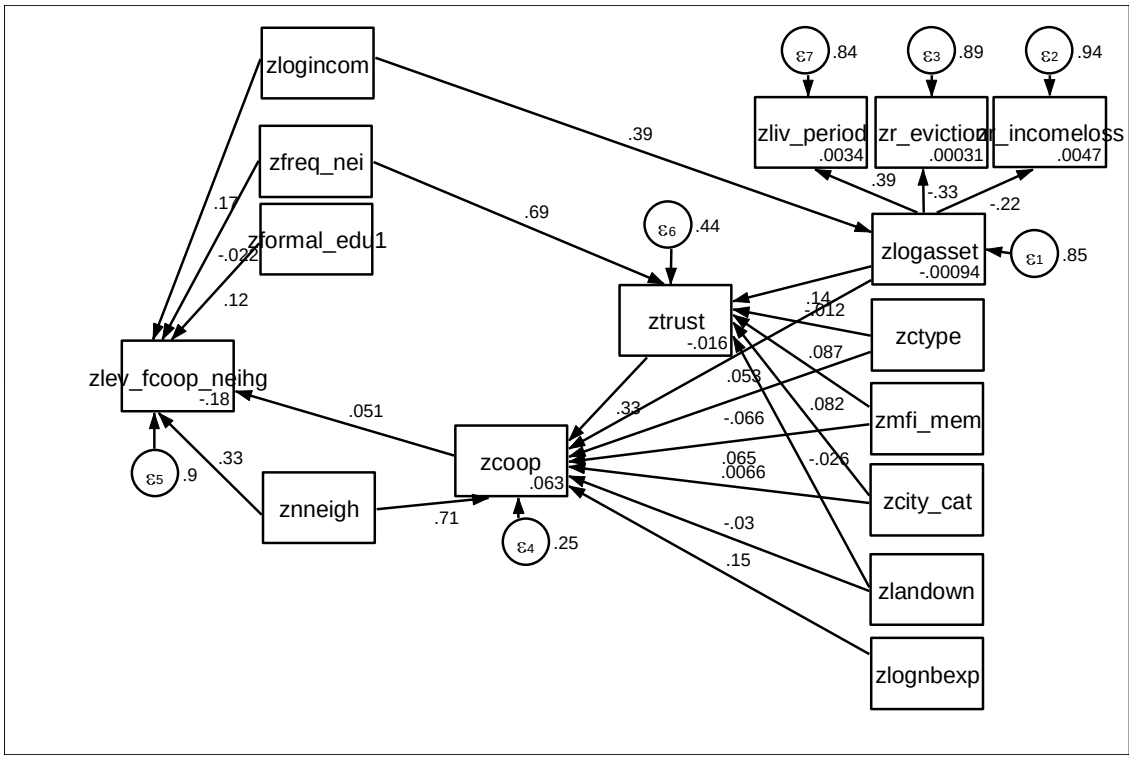


Figure 7.1: Model 1 Social capital is predetermined (the case of neighbours in financial cooperation)

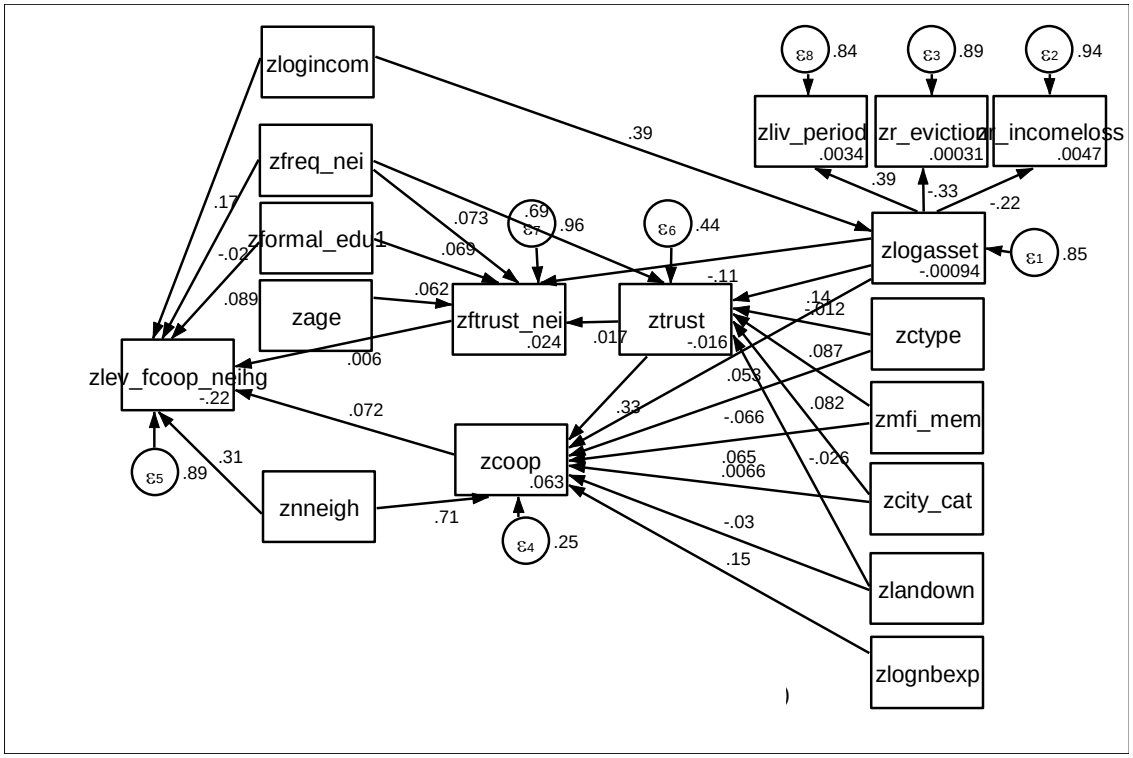


Figure 7.2: Model 2 Social capital is co-determined (the case of neighbours in financial cooperation)

Note: Variable names (used in Figure 7.1 and 7.2) and their descriptions are presented below:

Table 7.1: Variable names and their descriptions

Variable names (normalised)		**Description of the variables**
zlogincom:	:	Household's log-income
zfreq_nei	:	Frequency of contact with the neighbour
zformal_edu1	:	Formal education of the household head
zlev_coop_neigh	:	Level of cooperation received from the neighbour
znneigh	:	Number of neighbours in networks
zcoop	:	Mean group level cooperation
ztrust	:	Mean group level trust
Zftrust_nei		Individual level trust in neighbour
zliv_period	:	Duration of living period in the neighbourhood
zr_eviction	:	Risk of eviction from the land/house
zr_incomloss	:	Risk of income loss
zlogasset	:	Household's total assets value (in log)
zctype	:	Type of neighbourhood
zmfi_mem	:	Whether the respondent is member of MFI
zcity_cat	:	City category
zlandown	:	Land ownership of the household in the neighbourhood
zlognbexp	:	Neighbourhood (e.g. rent and utilities) expense (in log)
zage	:	Age of household head

7.3.3 Discussion

Individual cooperation was assumed to be *directly* influenced by the number of neighbours, the frequency of contact with them, household income, the level of education of the household head, and group cooperation. However, their estimated size and low significance suggest that the effects of those variables on individual cooperation might not be underlying as was hypothesised in Figures 7.1 and 7.2. Rather, true relationships may be less direct and may lie in different pathways. This gives grounds for an alternative hypothesis of relationships that might better explain the relationships between individual behavioural outcomes and socioeconomic variables in the models. With this assumption, the new models would assume that (individual) household characteristics are largely defined by group characteristics. So those household level variables may affect individual behaviour indirectly, moderated by group characterstics (rather than as was assumed in

Figure 7.1 and 7.2). The new models assume that several household-level variables affect individual cooperation through predicted group characteristics.

In the new models (which differ from the models described above and presented in Figures 7.1 and 7.2), three household-level characteristics – education of household-head, living period of household and type of neighbourhood – are assumed to affect individual cooperation *directly*. In addition, individual cooperation is assumed to be directly influenced by group cooperation (and individual trust, endogeneously determined by group trust, household assets and education of household head, see Equation 7.5). The expectation of group cooperation is an endogenous factor in terms of expected group trust, household income, age of the household head, MFI membership and land ownership. Again, group trust is also determined by exogenous observed factors such as household income, household assets, household size, age of household head, MFI membership and category of city of residence. The nature and extent of relationships between individual cooperation and variables considered in the new models (Figure 7.3 and Figure 7.4) are discussed in the following three sub-sections.

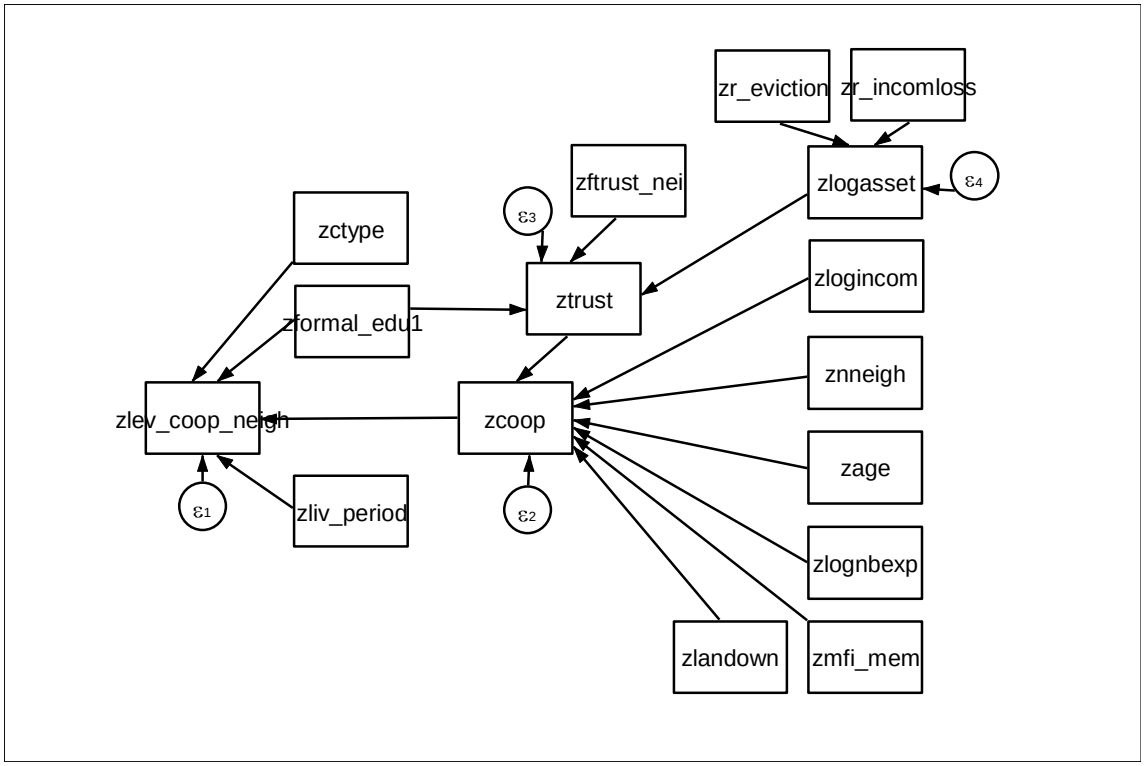


Figure 7.3: Social capital is predetermined (new model-1 for Equation 7.4)

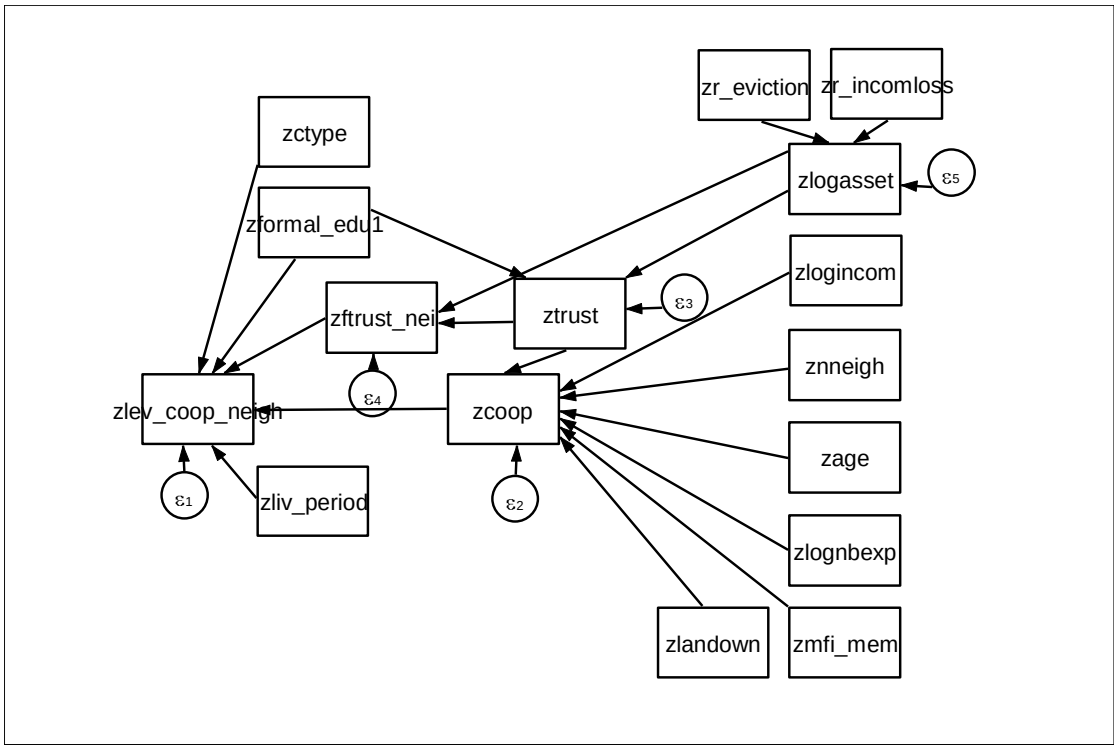


Figure 7.4: Social capital is co-determined (new model-2 for Equation 7.5)

The estimates (beta-coefficients) of the new models are presented in Table 7.2 (regarding financial cooperation) and Table 7.3 (regarding nonfinancial cooperation). A three estimations procedure (using OLS, 3SLS and Max.-likelihood) is carried out for each of the predetermined and codetermined social capital models. The OLS estimation explores the direct relationship between individual cooperation and the predicted group characteristics (not influenced by the individual characteristics assumed to have an indirect affect), along with other individual characteristics, whereas the other two estimations explore both linear and non-linear relationships. The three estimations provide the comparative relationships among estimates within a model and between two models. Details of the estimates can be found in Appendix D.7.1 and D.7.2.

7.3.3.1 Direct effects

As expected, group cooperation, education of the household head, living period and neighbourhood type are found to directly affect individual cooperation.

(a) Expected group cooperation

The results indicate a positive relationship between individual cooperation and expected group cooperation. The parameters estimated in three estimations (in both models) show

that individual cooperation increases as expected group cooperation does, and that the effects vary between .12 (in OLS) and .51 (in 3SLS) standard deviation in the case of predetermined social capital that are slightly smaller than the parameters estimated in the case of co-determined social capital (Table 7.2 on financial cooperation). However, this strong relationship is not evident in the case of non-financial cooperation (compare Tables 7.5 and 7.6).

(b) Education

A positive relationship between individual (financial) cooperation and education level of the household head is evident in both models (Table 7.2). The parameters indicate that individual financial cooperation increases significantly as the level of education of the household head increases. The parameters estimated in 3SLS and maximum likelihood estimations vary between .24 and .19 respectively. These parameters differ slightly between two models, but are lower than the parameters calculated in the OLS estimation in both models. However, such a significant relationship between individual cooperation and education really does not exist in case of non-financial cooperation (see Table 7.3).

Table 7.2: Dependent variable: Individual's perceived 'degree of cooperation' for monetary helps from the neighbours

[Parameters are *eta*-coefficients]

	Equation (7.4)			Equation (7.5)		
	OLS	*3SLS*	*Max. Likelihood*	*OSL*	*3SLS*	*Max. Likelihood*
Group cooperation	.12***	.51***	.28***	.14***	.61***	.29***
Group trust		.10**	.30***		.11	.30***
Income		*.15***	*.14****		*.15***	*.14****
Assets		*.16***	*.13****		*.17***	*.13****
Household size		*-.08*	*.07****		*-.13***	*.07****
Age of the head		*.14***	*.18****		*.19****	*.18****
MFI member		*.37****	*.24****		*.39****	*.24****
Category of city		*.01*	*.13****		*.02*	*.13****
Income		.31***	.24***		.31***	.24***
Neighbs. in contact		.77***	.68***		.77***	.68***
Age of the head		.13***	.10***		.13***	.10***
Neighb. exp.		.06*	.07***		.06*	.07***
MFI membership		.09**	.04***		.10***	.04***
Land ownership		-.03	-.03**		-.02	-.03*
Individual trust				-.01	-.92***	-.02
Group trust					.41***	.09***
Assets					-.20***	-.10***
Education of head					.06	.08***
Education of head	.29***	.21***	.22***	.26***	.24***	.19***
Living period	.13***	-.01	.07	.14***	-.09	.07
Type of community	-.23***	-.24***	-.22***	-.20***	-.19***	-.21***
Constant	.04	-.19***	-.19***	-.00	.01	-.02***
N	*515*	*263*	*1784*	*471*	*250*	*1784*
R^2	*.12*	*.09*	-	*.11*	*-.56*	-
Adj- R^2	*.11*	-	-	*.10*	-	-
F	*17.69*	-	-	*11.62*	-	-
χ^2	-	*53.97*	-	-	*79.89*	-

Table 7.3: Dependent variable: Individual's perceived 'degree of cooperation' for nonfinancial helps from the neighbours

[Parameters are in *Beta*-estimates]

Variable	Equation-(7.4)			Equation-(7.5)		
	OLS	*3SLS*	*Max. Likelihood*	*OSL*	*3SLS*	*Max. Likelihood*
Group cooperation	-.07***	.07**	-.02	.04	.08*	-.04
Group trust		.17*	.30***		.15	.30***
Income		*.15***	*.14***		*.15***	*.14***
Assets		*.17***	*.13***		*.18***	*.13***
Household size		*.02*	*.07***		*-.02*	*.07***
Age of the head		*.14***	*.18***		*.14***	*.18***
MFI member		*.31***	*.24***		*.31***	*.24***
Category of city		*.03*	*.13***		*.09***	*.13***
Income		.26***	.24***		.26***	.24***
Neighbs. in contact		.68***	.68***		.67***	.68***
Age of the head		.12***	.10***		.12***	.10***
Neighborhood exp.		.08***	.07***		.09***	.07***
MFI membership		.06**	.04***		.06***	.04***
Land ownership		-.03*	-.03**		-.03	-.03**
Individual trust				-	-.08	-.03
Group trust					.69***	.09***
Assets					-.27**	-.10***
Education of head					.01	.08***
Education of head	.01	.04	.05	.01	.05	.05
Living period	.08*	-.00	.05	.08***	-.01	.05
Type of community	-	-.00	-.01	-.03	-.01	-.01
Constant	.01	.00	.02	.02	.02	.03
N	*176*	*800*	*1786*	*1654*	*768*	*1784*
R^2	*.01*	*-.01*	-	*.01*	*-.03*	-
Adj- R^2	*.01*	-	-	*.01*	-	-
F	*4.60*	-	-	*4.42*	-	-
χ^2	-	*6.71*	-	-	*6.63*	-

(c) Living period

The relationship between cooperation and living period is direct (as well as correlated - see Figures 7.1 and 7.2). Although the parameters estimated in new models are insignificant in 3SLS and Max.-likelihood estimations, they are statistically significant in OLS estimations. One standard deviation longer living period potentially increases individual cooperation by .13 and .14 standard deviation respectively in the two models (see Table 7.2). A similar relationship is also evident in the case of non-financial cooperation from neighbours (see Table 7.3).

(d) Type of neighbourhood

A negative and statistically significant relationship between financial cooperation and neighbourhood type is evident across three estimations of two models. It means that the degree of financial cooperation is higher in comparator areas than in poorer ones. Individual cooperation decreases between .22 and .24 standard deviation in the case of predetermined social capital for living in poor neighbourhoods that are slightly higher than the corresponding parameters in the case of co-determined social capital. However, no such relationship is apparent in the case of non-financial cooperation in either model. This might imply that the financial incapability of those living in poor neighbourhoods may limit financial cooperation.

(e) Individual trust (Equation 7.5)

According to estimates, the relationship between individual financial cooperation and the individual trait of trust is not statistically significant. This might imply that cooperation is not codetermined by one's trust in neighbours (Equation 7.5 and Table 7.2). The evidence is also true for the case of non-financial cooperation (Table 7.3).

7.3.4.2 Indirect effects

The general assumption in the new models is that individual cooperation is moderated by average expectation of group behaviours. Socioeconomic factors that form norms of social behaviours may have no direct relationship with individual behaviour; however, they may have an indirect effect.

(a) Effects through group cooperation

Individual cooperation is positively correlated with group cooperation. Group cooperation depends on group trust, household income, number of neighbours in contact,

age of household head, neighbourhood expenditure, MFI membership and land ownership of the house. This means that the factors affecting group cooperation indirectly influence individual cooperation. According to the estimation, the factors (particularly the number of neighbours in contact with each other) have been found to affect group cooperation significantly. In both models, group cooperation increases by between .68 and .77 for one standard deviation higher number of neighbours in contact (Table 7.2). However, group cooperation is less among households living on public land. This relationship is even higher in the case of non-financial cooperation, and the difference is very small (Table 7.3).

(b) The effects through group trust

Despite the lack of a direct relationship between group trust and individual cooperation, the former is significantly correlated with individual trust (Equation 7.5). The parameters estimated in 3SLS and maximum-likelihood estimations imply that individual trust increases by .41 and .09 standard deviation respectively for one standard deviation increase in group trust. Moreover, individual trust is negatively correlated to household assets; both 3SLS and maximum-likelihood estimates indicate that having more assets would potentially decrease individual trust in either type of cooperation (financial or non-financial). Equally, the level of education of the household head increases individual trust. Although the estimate in 3SLS estimation is statistically insignificant, it is statistically significant in the maximum-likelihood estimation of either cooperation.

(c) Effects of group trust

More distant relationships between group trust and factors such as income, assets, age of household head, MFI membership and category of city are evident. Most of these factors positively influence group trust with varying degrees of significance. However, the relationship between group trust and household size is negative in two estimations of each model regardless of the type of cooperation.

MFI membership significantly increases group trust compared to any other factors in the models. The parameters vary between .24 and .39 in the case of financial cooperation and between .24 and. 31 in the case of non-financial cooperation. Other factors have less effect on group trust (see Tables 7.5 and 7.6).

7.3.4.3 Correlated effects

There are correlated effects linked to some socioeconomic variables. The risks of irregular income and eviction, which lead to social vulnerability, are significantly related to household assets. According to estimates, having fewer assets also suggests a low income and potentially increases social vulnerability (Appendices 7.1 and 7.2). The risks of having an irregular income increase by between .22 and .31 as household assets decrease by one standard deviation. The risk of eviction from the land is even higher, and varies between .31 and .54 in two models. These effects could imply that potentially, social vulnerability has some related effects on individual cooperation.

7.3.4 Conclusion

The insignificant differences between estimates in two models (Equation 7.4 and 7.5) imply that whether social capital is predetermined or codetermined matters less in understanding cooperation. However, it is critical to understand ways in which some contexual factors affect the social norms of cooperation as well as of trust. Measuring cooperation is not straightforward, as the factors are interlinked, so, understandably, the effects of one factor on another fluctuate. Yet an inference on the relationships between cooperation and contextual factors could be drawn from the estimation results such that individual cooperation is largely determined by group norms. Factors such as norms of trust, income levels, networks among neighbours, age of the household head, neighbourhood characteristics and MFI membership, which distinguish between groups, are linked to individual cooperation. Higher education potentially facilitates cooperation among neighbours. Financial cooperation is potentially higher among the poor in wealthier neighbourhoods (e.g. the comparator poor). However, nonfinancial cooperation does not necessarily differ among poorer neighbours regardless of where they live.

In conclusion, the effects of social networks and socioeconomic factors on cooperation are complex; this could suggest that individual cooperation is potentially high in neighbourhoods where people are more in contact with each other. The effectiveness of social capital thus relies on norms of social behaviours rather than on definitions of individual characteristics. Therefore, an understanding of context is more important to an analysis of cooperation and its implications for neighbourhood development; the characteristics of the neighbourhood significantly influence the outcome/opportunities for people in terms of ability to gain access to social capital and therefore social inclusion and wellbeing (see van Ham and Manley, 2015; Bailey et al., 2015). Such an implication

offers scope for thinking in town planning about how the structure and form of a neighbourhood influences opportunities for people. Thus this work offers some evidence of the importance of the neighbourhood structure. It could also be related to the literature on ‘mixed neighbourhoods’, where people experiencing disadvantage are not clustered in one area.

Chapter 8: The Implications of Social Capital for Affordable Housing

8.1 Introduction

While in principle pro-market housing policies could be viewed as the main way to provide housing, those policies have achieved little in practice to deliver affordable housing to the urban poor of Bangladesh. As a result, more than half of the total urban population still lives in informal housing (WB, 2016a; NHA, 2012; GoB, 2015). The situation in Bangladesh is typical of the developing world in this respect. This situation is the result of income inequality (see Section 2.3.2), and there is an argument for redistribution of income and wealth through income or housing subsidies; such provisions do, however, have their own limitations (Prest and Barr, 1979; Musgrave and Musgrave, 1989; Bramley et al., 2005). To varying degrees, all developed countries have such a system, in the forms of social housing or housing allowances, in recognition of the reality that the poorest households cannot afford minimally decent housing without assistance.

The lower-income households cannot afford minimally adequate standards of housing, as the housing produced in the market is expensive (see Section 2.3.3). Such a consequence implies that pro-market housing policies have failed to deliver affordable housing to the urban poor, so that their housing needs remain unmet (Rahman, 2010; Rahman, 2012). As in many developing countries, the poor house themselves in informal settlements with limited resources and limited access to land; they are only able to do so in very poor conditions (Bredenoord and van Lindert, 2010; Monkkonen, 2011)

Though the Bangladesh government made some non-market interventions to provide minimum-standard housing to the poor, these measures failed, allegedly due partly to the relocating of the poor to the city's periphery, and partly to corruption in housing allocation (Khan, 2012c; Khan, 2012a). The affordable housing demands (and needs) of the urban poor have received less attention in policy (NHA, 2012). This policy document highlights some of the issues relevant to informal housing upgradation in cities in half a page which

includes: (i) restriction on informal housing on private land; (ii) rehabilitation of the urban poor before eviction; (iii) involvement of slum residents in slum upgrading; (iv) installation of necessary infrastructures and services; (v) incremental construction and gradual upgrading of slum housing; (v) cross subsidy; and (vi) social housing. However, the ill-developed market infrastructures, lack of housing finance, lack of provision for public/subsidised housing, and non-involvement of the poor in planning and development remain the major challenges to affordable housing policies (see Section 2.3.3 for details).

The extent of housing research in Bangladesh is limited, and most studies have viewed the housing of the poor from the perspective of the 'public good' (Begum, 2007a; Rashid, 2009c; Islam, 1996; Nawaz, 2004; Khan, 2012c; Hossain, 2011b); this emphasises the need for free housing/land to the poor and largely undermines the market forces. Given the existing demands (needs) for low-cost housing and scarcity of city land, such an approach is understandably impractical (see Section 2.3.3 for details). But affordable housing for the poor could be argued for from the perspective of 'merit good'[29]. However, this perspective has little been appreciated in national housing policies in Bangladesh. Affordable housing for the poor may be argued as part of the wider welfare economic perspective of human welfare and as part of societal development goals, emphasising links to education, health and workforce development.[30]

A small section of the literature discusses housing market weaknesses and constraints, which disfavor the functioning of housing market in Bangladesh. Barriers to an affordable housing supply include a large stock of housing held by a small group, a small housing finance market, the absence of a secondary housing market, easy regulations and market information, higher interest rates and short maturity period for mortgage finance, and absence of proper land titles (see Section 2.3.3 for details). Though the growth of housing

[29] The merit good is essentially that if (poor) people are able to consume a minimum quantity/quality of certain specific goods/services, this generates significant wider collective benefits to society, and provides merits specific to subsidy/regulation/provision. The argument is most often used in respect of education, health and housing. It can be rationalised as a type of informational externality, sometimes called 'altruism'; I get some benefit from knowing that however poor some people are they do not have to sleep on the streets, and I am willing to pay something to ensure that this does not happen. Musgrave RA and Musgrave PB. (1989) *Public Finance in Theory and Practice*, US: McGraw-Hill Inc, LeGrand J. (1991) Quasi-Markets and Social Policy. *The Economic Journal* 101: 1256-1267, Bramley G. (1993) Quasi-Markets and Social Housing. In: Grand JL and Bartlett W (eds) *Quasi-Markets and Social Policy*. London: Palgrave Macmillan UK, 154-182..

[30] The benefits of conditional altruism might not be obvious; however, actions would have long-term implications in reducing social costs by addressing public health concerns and the negative effects of slum characteristics on surrounding neighbourhoods. In the case of providing higher standards of living conditions to the poor, social benefits may come through efficient labour forces or reductions in public health expenditures Roback J. (1982) Wages, rents and the quality of life. *Journal of Political Economy* 90: 1257-1278.

finance is significant (see Section 2.3.3), access to that finance is limited to the richer section of society. However, the finance market would not flourish if there were risks involved in housing finance. Those risks come from various sources, including from the lack of proper land title and regulations (Abdulai et al., 2011; Huang and Clark, 2002; Gurran and Bramley, 2016).

Much of the potential demand for housing in Bangladesh is ineffective. Poor households' spending goes largely on daily necessities as incomes increases. But housing is more than just a basic essential, and there are dimensions of luxury, conspicuous consumption and investment motives, which lead to an increase in demand for housing as incomes rise. The formal housing units (produced by real-estate developers) is significantly large, making housing unaffordable to middle- and lower-income households (see Section 2.3.3).

Nonetheless, the supply of affordable housing to the urban poor is not guaranteed by the country's existing market policies. Ideally, housing would be supplied by a market in which market efficiency is ensured along with a certain level of equity. With such an aspiration, the quasi-market[31] approach may be relevant here.[32] In this process, social capital around cooperation may have implications for overcoming the public good/collective action problems and achieving the general good. A possible link might be to the notion of cooperative-based housing agencies (like community-based housing associations). Such models typically require a certain amount of public subsidy (Malpass, 1999). This chapter argues that even after the public subsidy, the affordable housing would require to follow the market process in which social capital might be mobilized for:

(i) the financial viability of housing investment; and

(ii) a non-market mechanism in land pooling and distribution of affordable housing to the urban poor.

Section 8.2 analyses the policy challenges associated with the housing market. Section 8.3 points to externalities. Section 8.4 discusses generalised solutions to specific market

[31]A quasi-market is a public sector institutional structure that is designed to reap the benefits of efficiency of the free market without losing the equity. LeGrand J. (1991) Quasi-Markets and Social Policy. *The Economic Journal* 101: 1256-1267.

[32] Quasi-market ideas arose in the advanced welfare state countries, where public provision of welfare through bureaucracies is established but is yet to achieve more flexibility and efficiency. However, such market-like policies may have implications for affordable housing supply to the poor in Bangladesh.

failures. Section 8.5 discusses the implications of social capital to address the market and non-market issues in affordable housing for the urban poor. Section 8.6 derives an economic model for affordable housing for the urban poor. The final section draws conclusions from the preceding analysis.

8.2 Market shortcomings and constraints

Along with the market shortcomings (see Section 2.3.3), the housing market is constrained by a number of factors such as scarcity of serviced land, the fixed locations of housing, and inefficient transportation systems; these act against the responsive supply of housing. These constraints are discussed in more detail in this section.

8.2.1 Housing is an expensive good

At current prices, a condominium apartment in a least-preferred neighbourhood like Mirpur in Dhaka is estimated as at least 56 times the annual income of the urban poor (see Section 2.3.3). The average monthly income of poor households is approximately BDT 13,000 (see Section 4.3). This figure approximates to the national income (BBS, 2010b). The average formal housing unit, at 1300 square feet, is far beyond the price range of large middle-income households (see Section 2.3). This contrasts with house price in countries like the UK or the USA, whose homes cost three to four times the annual average income (LeGrand et al., 2008; Bramley et al., 2005; Barr, 2012).

8.2.2 Shortage of developable land

Bangladesh is one of the most populous countries in the world, with as many as 1,200 people per sq. km (see Section 2.3). Therefore, there are concerns over loss of agricultural land, filling out depressed land, and provision of infrastructure and services. Planning regulations are applied to deliver land for housing in order to ensure the optimum use of scarce land. Vacant land may not be granted, or land development for housing may require infrastructures and services requiring considerable investment and time. Therefore, the immediate supply of land is constrained by various factors including social, economic, biophysical, neighbourhood and institutional ones (Ahmed et al., 2014).

8.2.3 Transportation problems

Since the mobility of people and goods is a major concern of city dwellers, the housing market is constrained by the transportation system. Good transportation is linked to housing solutions (WB, 2016a); However, in cities in Bangladesh, transportation networks have poor infrastructure and are highly inefficient, and trips within big cities like Dhaka and Chittagong are typically long. Transport systems incur financial costs and loss of working hours. Thus, transport networks (with offices, schools, hospitals etc.) influence households' preferences of housing location. The standard daily commute is expected be limited to an hour (Bertaud, 2014); therefore, housing policies are linked to and constrained by transport policies.

8.2.4 Fixed location

Unlike other goods, housing is not moveable from one location or city to another. Although housing land in Dhaka is expensive, it is cheap in other cities. Fixed location is therefore a major housing market constraint contributing to unaffordability. Housing may be affected by a range of costs associated with the households, such as changing of jobs, longer commutes, changing of schools and loss of social goods (e.g. social capital) that are spatially embedded. However, unless a move to another location will bring significant gains, households are unlikely to relocate. Subsidised housing in a particular region (especially on the outskirts of a city) may not be an appropriate strategy of 'affordable housing'.

8.3 Market externalities

Benefits of an efficient housing market could be offset by a number of external factors if the market fails to consider the social costs. In such a situation, marginal social cost exceeds marginal social benefits (LeGrand et al., 2008; Bramley and Leishman, 2005). For instance, a slum with an unhygienic living environment is likely to spread disease that would incur public health costs. Similarly, costs may be incurred from congested neighbourhoods lacking sunlight, or narrow streets, or social crime that would reduce the optimum benefits of living in the neighbourhood concerned. Narrowly defined efficient markets have little power to overcome these factors.

8.4 Policy responses to the housing challenges

Investment in housing is associated with large amounts of money, so there are risks associated with non-recovery. Such market behaviour is not unexpected *per se*, because of the illiquid nature of the land and housing assets that financial institutions hold against the liquid nature of liabilities (Musgrave and Musgrave, 1989). This kind of market behaviour would set out stringent regulations to discourage the sanctioning of finance to low-income groups (LeGrand et al., 2008; Barr, 2012).

There are significant market failures in housing, which can be analysed diagnostically towards various possible solutions involving government subsidy, regulation and direct public provision.

Table 8.1: Major housing market challenges and expected policy responses

Market challenges	Policy responses
1. Imperfect Competition: -Monopoly in land holding -Capital market gap -Absence of market information	-Deregulation (e.g. mortgages), stock transfer -Mobilisation of local and external fund -Introduction of estate agencies
2. Unequal distribution: -Wide housing inequality -Unequal access to capital market	-Income or housing subsidy -Tenure neutral policies for housing construction and mortgage finance -Introduction of non-profit intermediaries
3. Externalities: -Public health hazards of slum housing -Lack of neighbourhood amenities in run-down or congested areas	-Regulations for minimum housing standards -Subsidies (renovation grants) -Area renewal schemes
4. Non-excludable, non-rival—public good properties: Public spaces in housing areas Crime	-Design guides; laws of tenement, -Localised housing management
5. Heterogeneous product: All housing distinct, spatially fixed Wide price/rent variations Inelastic supply, price booms/slumps	-Planning policies for new housing incorporating overall numbers, location, type and size -Tax and interest rate policy -Public/subsidised provision

Source: Adapted from Gurran and Bramley (2016)

Another issue is the measurement of housing supply and the different ways it can be adjusted. The housing literature talks about housing services, which is a composite of physical housing space (sq. m.), privacy, quality of building, quality of included fixtures/equipment, quality of immediate environment, and management of common elements of the housing block. Again, a lower price is presumably not expected within high market demand and low supply constraints. A particular package of recommended solutions targeting the poor on the interface between economic and social policy, where there is some hybrid or contrived structure, may call for a 'quasi market'; this aims at a solution to market failure problems, including unacceptable distributional outcomes. Two particular ways of facilitating affordable housing supply are discussed, where social capital would have implications for housing the urban poor.

(a) By developing small-parcel land holding by the poor land owners in cities, requiring land pooling and construction finance. This kind of development targets the 'comparators areas' where poor land owners provide informal housing to the landless poor in cities.
(b) By redevelopment of the existing slums on public land, which would require the provision of necessary infrastructures and the physical construction of housing. Such a redevelopment is largely linked to political will to release land controlled by the local powerbrokers.

8.5 Implications of social capital for affordable housing challenges

Current market response to housing need is limited, offering no choice to the urban poor, and the existing housing policies provide little direction in delivering affordable housing to the poor in Bangladesh. The situation demands government intervention to deliver affordable housing that might focus more on equity. Interventions would need to address the economic strength of the country, the proportion of urban poor in cities, deliverable land, and the finance options which pose challenges to affordable housing. There is also a challenge in terms of institutions, with the need for a new institutional form to promote and organise housing upgrades for the urban poor.

One can in theory envisage policies to narrow income inequality, although these are not high on the agenda in Bangladesh. However, one aspect worth mentioning is the issue of housing allowances. This is obviously a direct solution to inequality in housing for the

poor. The problems are that any reasonable scheme would be unaffordable for the government, and that if not linked to reformed supply side measures, it would tend to inflate rents and prices further, making it self-defeating. Unless income inequality is significantly reduced, there appears to be little option left but to intervene in the demand-side factors to accommodate the urban poor. Any change which could facilitate affordable housing is largely attributed to intervention in supply-side instruments.

8.5.1 Small-parcel land development

Many small parcels of serviced lands owned by the poor households in cities are left undeveloped in poor neighbourhoods. Those lands are providing a sub-standard housing to the urban poor. Redevelopment to higher density could raise both the quantity and the quality of supply. So, there is a scope for development of such land for affordable housing to the urban poor.

Issues for such developments include: (a) the tiny plot size and loss of economy of scale (after adhering to planning regulations and building codes, such plots produce costly housing); (b) the physical constraints inflicting problems of financial feasibility; and (c) poor land owners have limited or no access to construction finance, so are unable to take part in private initiatives.

The level of trust and cooperation among poor neighbours (see Section 7.3), including in the comparator areas, may potentially be mobilized to merge the small-parcel land for viable housing development, raise local finance for construction, gain access to formal finance and maintain the post-construction housing stock. This implies that there are potential opportunities for social capital to be drawn on to facilitate the necessary actions to house for the poor. Exactly how this might work will be discussed below, where of trust and cooperation among neighbours are seen to be of value in tackling some of the market and non-market challenges.

8.5.1.1 Available land for affordable housing

Merging small-parcel land might provide efficiency in structure and construction, and this would potentially bring financial viability to the housing development. Small-parcel lands in already-developed areas might be a substantial source of land readily available for the construction of affordable housing, and multi-storey development on such land could supply substantial quantities of housing units. However, land pooling and collective

construction efforts would require the effective mobilisation of the social capital of poor landowners (see Section 6.4 and 7.3). This collective approach potentially provides some economies of scale of affordable housing construction that could also attract formal loan finance for the poor landowners.

The greater challenge lies in the relationship of trust among the participating poor landowners, who would need to interact and motivate themselves to work collectively in the construction of housing. Trust among members of a group is higher than that among non-members (Section 6.2). Particular attention may need to be paid to the formation of a group so that the regular discussion could take place. These interactions are expected to increase trust and cooperation among group members. This would imply that a homogeneous group with similar goals might build strong ties based trust, leading to higher levels of cooperation. This could have potential implications for small-scale land merging.

8.5.1.2 Finance

Housing development involves large-scale investment for longer terms, so there is much concern over financial risks. Conventional housing finance sees poor landowners as less attractive; the risk of recovery is always a major concern for the financial institutions. Any loan provider would want to avoid such risk, suggests that finance for housing construction is competitive. Other financial sources, such as the secondary money market, might offer an alternative source, however, this requires a solid institutional framework, specific mechanisms and institutions to generate capital. The government's intervention in managing financial risk is also important when it comes to channeling finance from the market. Moreover, there may be a need for mechanisms to reduce front loading to adjust high interest rates, for example, with index-linked mortgages. These concerned with reducing the risks of housing finance. Incentives for private sector investment in this particular housing sub-market seem critical for making finance available to the poor land owners (LeGrand, 1991; Bramley, 1993).

Questions of housing finance for poor landowners may introduce the concept of microfinance and how it operates, and may mobilise collective funding for construction. This approach could increase the supply of housing finance and reduce the risks of

investment.[33] In the case of microfinance, the risks of non-payment could be shared by group members. This would mean that the members taking collective responsibility for repayment, with trust and cooperation playing a crucial role. However, a high level of trust and cooperation are involved in generating the large amounts required for housing finance. The findings of Chapters 6 and 7 might suggest a certain level of trust and cooperation that could be used to gain higher levels of housing finance. Once the group can identify the benefits of collective housing development, the risk of default repayment reduces. Given that the urban poor in Bangladesh have somewhat insecure incomes, provision needs to be made to bridge gaps in payment.

8.5.1.3 Intermediaries

The two points above on land pooling and capital finance would suggest the necessity of a third party in market and non-market interventions. The roles of such an intermediary may not be limited to mobilising social capital to generate financial capital from secondary bond/security markets, but may be extended to negotiations for other sources of finance (via budgetary allocation or foreign investment), and to providing technical support in negotiating finance, construction, planning, transfer, repayment and maintenance.[34] For an instance, an intermediary could invite developers to tender for building, securing the supply of standard housing at a comparative price. This model could also help poor landowners wanting to build in an incremental way, by adding extra floors to a building as and when they can afford to. These interventions may also reflect responsiveness to the housing market demands of the urban poor.[35]

Both interventions (of merging land and construction finance) would require a high level of trust and cooperation among poor landowners, and the intermediary's role would be considerable. Once a certain level of trust and cooperation exists among the poor (see Section 6.4 and Section 7.3), then certain market and non-market challenges (such as pooling land, mobilising local fund, sharing risks of recovery of investment and

[33] The sums involved and the required durations of loans would surely be beyond normal microfinance limits. However, existing microfinance cooperators might use that as a basis to seek larger-scale funding from a scheme which, perhaps with government backing/guarantees, could obtain larger /longer loans or bond finance.

[34] For example, in the UK there is something called The Housing Finance Corporation which syndicates bond issues on behalf of smaller housing associations, and there are also Secondary Housing Associations/Cooperations which provide services (finance- or development-related) to small community-based housing associations and cooperatives (notably in Glasgow).

[35] There might be another model, more suitable for small cities like Kushtia, where the demand for housing is moderate and residents are encouraged to build better housing, perhaps 2-3 storeys high, on their existing plots.

maintenance of common space) could potentially be resolved. Such an institutional mechanism could facilitate regular meeting (interactions) to build the strong ties necessary for collective effort in housing construction that could facilitate access to finance and extend to actual contribution of labour time, as well as enhancing decisions and shortening decision-making time. All would potentially reduce the costs of delivering housing to the urban poor (Walker, 1993).

Yet once the development has become viable, the housing price may reach the general level of the market. Thus, certain measures, such as keeping housing units small or having shared spaces (for kitchens and toilets), need to be in place to keep prices/rents low. Housing needs to be affordable to the poorer section of the urban community; this may include some upwardly-mobile, formerly poor people, however, it is unlikely to be affordable to the poorest from the informal slum areas without an allowance.

8.5.2 Slum redevelopment [or upgrading]

Affordable housing policies for the landless urban poor might offer slum residents a choice between existing and peripheral settlements; however, it is reasonable to predict that few would choose the latter. The poor might not move out to a newly planned suburb in the context of a city with poor transport facilities where informal income activities are concentrated in the city centre. Therefore, in-situ slum redevelopment (or the upgrading of slums) could potentially offer an option to the landless poor. The most common and most recommended policy approach in many other developing countries is upgrading, where public intervention is mainly focused on putting in proper infrastructure (which may require moving some people and demolishing some houses) and assisting poor residents in their own efforts to improve their homes incrementally. However, in the context of Bangladesh, particularly in large cities like Dhaka and Chittagong, upgrading alone may be downplayed by non-targeted beneficiaries (e.g. local powerbrokers) and sub-standard housing. Such an approach would be inefficient in Dhaka and Chittagong too, where the population densities of slums are 220,246 and 255,100 per square kilometre respectively (see Table 2.2 for slum density). However, the redevelopment of slums raises a number of political and market concerns, including: releasing land from the powerbrokers; provision of infrastructures; channeling finance; delivering technical support in construction; distribution of housing to the target poor; intervening in long-term recovery plans; and maintaining the financial viability of the programme. In the

following sub-sections, we discuss the four issues concerning slum redevelopment in which social capital may have potential implications.

8.5.2.1 Subsidised land to house slum dwellers

The big slums in cities in Bangladesh have been developed largely on land held by the public institutions. This land is left vacant for future use despite the urgent need for a minimum standard of housing for the urban poor. Arguably, social disorder helps powerful groups to exploit the poor via rents on informal housing with minimal or no investment (Hossain, 2011a). Also, the supply of unauthorised utility service connections to the slums, arranged through informal negotiation with service providers, incurs losses in public revenue. This context provides support for the argument that existing slums on public land could be used for affordable housing with necessary tenure security for the existing slum dwellers.

Substantial amounts of private land are deliberately left vacant for economic rent. The gains from vacant private land are two-fold: revenue from rent of substandard housing, and revenue from increasing land values. However, these gains have little social benefit. The land is readily available with the necessary infrastructure and services for construction, and the locations are well connected with formal and informal labour markets. In some cases, land may need to be connected with service lines of surrounding neighbourhoods, but this would take little effort. Given the scarcity of serviced land in cities, the existing private vacant land might also be used for mixed development, part of which can house the existing and displaced slum dwellers and part being used for private market housing, and possibly some can be used for businesses.

Generally speaking, land is very limited in Bangladesh, particularly in cities like Dhaka and Chittagong, being largely owned by private individuals and public institutions. So relying on the public alone would not release enough land to build affordable housing for slum dwellers. Also, delivering land for such a purpose would involve the political economy. However, it could be argued that land can be directed to a purpose for overall social benefits. Even private slum land may be acquired for a legitimate public purpose

under planning and/or housing policies, subject to due process and to some form of compensation code.[36]

8.5.2.2 Sources of finance

Once the major question about land for affordable housing is solved, if ever, then finance is another critical factor in slum redevelopment. This issue may be solved in the market process; however, non-market aspects may be critical for the financial viability of the market process and substantial supply of affordable housing for the landless poor. Government budgetary allocation may be an initial source of finance for the construction of buildings. Other sources, as discussed above, such as a secondary money market and the mobilisation of local resources, may be considered along with this one to address the issue of small-parcel land development.[37] Other sources may include international donor agencies such as the WB, DfID and ADB, who work in livelihood development of the marginal poor in Bangladesh and elsewhere. Loans from those bodies may be enabled by low interest rates and longer recovery periods.

8.5.2.3 Requirement of intermediary

This kind of redevelopment might require a particular kind of intermediary who could negotiate with different stakeholders to release land, channel finance, recover costs and maintain housing stock. There are a number of viability issues including efficient (compact) use of land, production of low-cost housing, maintenance, an easy and long-term repayment plan and distribution of housing among the targeted poor. Such services would require a trusted body which can mediate and facilitate redevelopment.

Any past intervention in the allocation of public land and housing has been fraught with political and administrative interference which have largely been counterproductive. The target poor have rarely, if ever, been the ultimate beneficiaries. It could be argued that in the absence of involvement of the poor themselves, the distribution process may be

[36] The 'slums' should not be eligible for market value compensation when compulsorily purchased, whereas more generally government land acquisition needs to be at market value. The 'inclusionary housing through planning' approach relies on trying to prevent or divert the land value uplift which occurs when planning permission (or up-zoning) is granted, so as to use it to offset the cost of affordable housing, and effectively to subsidise it. This capturing of development gain is also important in helping to pay for infrastructure improvement Gurran N and Bramley G. (2016) *Urban Planning and the Housing Market: International Perspectives for Policy and Practice*: Palgrave Macmillan UK.

[37]The UK's concept of housing associations, which are non-profit and subject to regulation, may be an option.They can operate and obtain long-term loan finance, and sometimes bond finance, at rates not much above those of government securities.

fraught with corruption. That implies that the allocation of subsidised housing would require the involvement of an intermediary, and residents should be involved in the decision-making process, drawing on the social capital in which the role of an intermediary is crucial.

Moreover, in the absence of an intermediary, even fair allocation of land to the slum dwellers may not supply the desired decent housing to the market. Any arrangement to lease subsidised land to the poor (e.g. in Bawnia or Dhaka), combined with a lack of access to finance, may discourage the efficient use of land. The allocation of ownership may help a few to achieve security of tenure, but would have little impact compared to the scale of need.

The roles of the intermediary are crucial in generating finance, recovering costs, providing expert services in construction and maintaining a large housing stock. A long-term repayment plan for finance and maintenance of stock would rely on the social capital of the slum dwellers. All of the arguments presented lead to the conclusion that there is a need to establish a *non-profit* intermediary who can be both effective and trusted to manage land allocation, finance, construction, and maintenance of affordable housing for the marginal poor in cities.

8.5.2.4 Forms of tenure

The form of tenure may be another issue in the provision of affordable housing for slum dwellers. Individual ownership may not be feasible; however, collective ownership might be economically viable, though subject to detailed conditions. Rental provision with necessary security of tenure may be more appropriate on the grounds that the ownership may not be financially viable and may raise hopes of someday becoming homeowners. Many of the poor cannot even pay for a minimally decent unit with shared toilets, showers and kitchens; subsidised rent may have to be considered in any financial recovery plan for slum redevelopment. In this process, the dwellers' social capital might be useful when allocating rent subsidy, as the group can decide who should be eligible for rent subsidy (as often happens when disbursing microfinance, with members deciding whose need is most urgent).

The provision of a housing allowance might be considered; this would have a significant impact in the redevelopment of slums in cities. Affordable housing policies entail the redevelopment of slums to ensure a continuous supply of housing to the urban poor. A

not-for-profit intermediary, like the housing associations in the UK, based in the community and drawing on social capital, seems both appropriate and necessary to this process. Such a non-profit (but legally controlled) intermediary might be useful in managing rents and repayments, similarly to the way in which microfinance institutions work in Bangladesh.

8.6 Theoretical derivation of affordable housing

The conventional housing market, primarily comprised of housing units produced by developers, is largely concentrated at optimum prices to maximise profit. In the context of a developing country like Bangladesh, these prices interplay between market actors (developers) and the higher end of society, and are facilitated by efficient market behaviours. This forces housing prices well above the budgets of middle- and low-income groups.[38] This market behaviour requires most urban residents to rent their homes; yet the urban poor may not be able to afford formal housing rents. In the absence of income or housing subsidies, the poor are likely to move to informal housing. Another issue worth noting is that the deficit in formal housing is excessively high, so the demand for affordable housing is also high. In this context, the housing market might be divided into two broad sub-markets on the basis of ownership and rental provision: the ownership market (denoted by D_1 and S_1, Figure 8.1(a)) and the rental market (denoted by D_2, and S_2S_3, Figure 8.1(a)). Obviously, the rental market is much larger than the ownership market. Demand in the rental market is expected to be varied and to depend on various levels of affordability, and this would determine the quality of housing in the market (e.g. S_2, S_3, and so on).

[38] (If the poor packed more than one household into a housing unit, they might be able to afford it, but this might infringe the regulations applied within the formal market, which are clearly not applied in slums.)

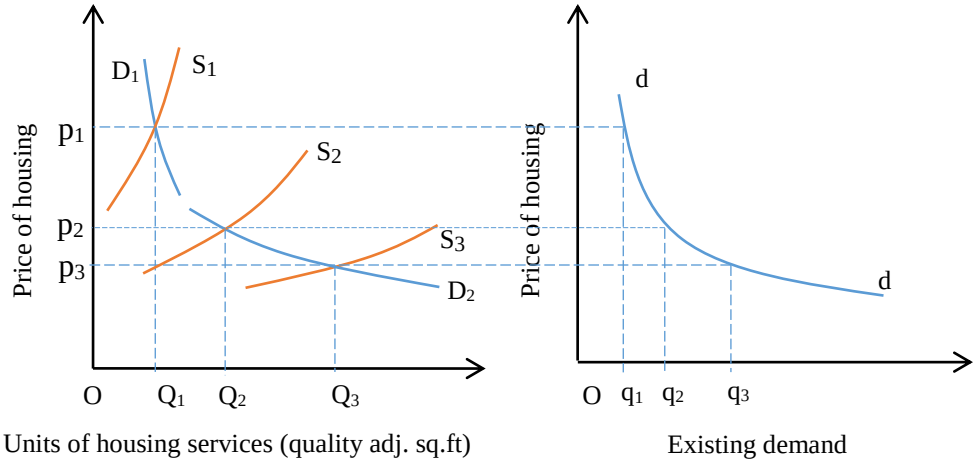


Figure 8.1: Housing markets and supply elasticity to demand

Given housing market policy and infrastructures, demand for ownership D_1 is expected to meet by the supply schedule S_1 [figure 8.1(a)]. This ownership market may be elastic but constrained by market forces such as finance, serviced land, geographic location, etc. Therefore, only OQ_1 quantity (quality) of housing units would determine the efficient market price at p_1. This means that OQ_1 quantity of housing units is produced against the total ownership demand of $OQ_1+OQ_2+OQ_3$. With such a gap between demand and market supply, price p_1 is likely to be speculative, which would have multiple effects on land values and interest rates. This means that if elasticity of supply is unresponsive to demand, competition among buyers would increase and prices would be pushed up. This would be followed by increases in land values (see Section 2.3.3) and interest rates on housing finance (both construction finance and mortgages). However, in the end, the market may be as efficient as predicted by economic theories.

Since p_1 is set at high prices, demand OQ_2+OQ_3 is ultimately ineffective in the home ownership market and shifting in the rental market. The concern is that if p_1 is speculative, this would influence the rental market too, though not on the same scale. The rental submarkets are separated by various institutional constraints etc., so that units of housing are priced differently on either side of the submarket boundary. Suppose the rental housing supply OQ_2 (in comparator and other areas) and OQ_3 (in slum areas after redevelopment) are available at p_2 and p_3. The mainstream private (rental) demand (OQ_2)

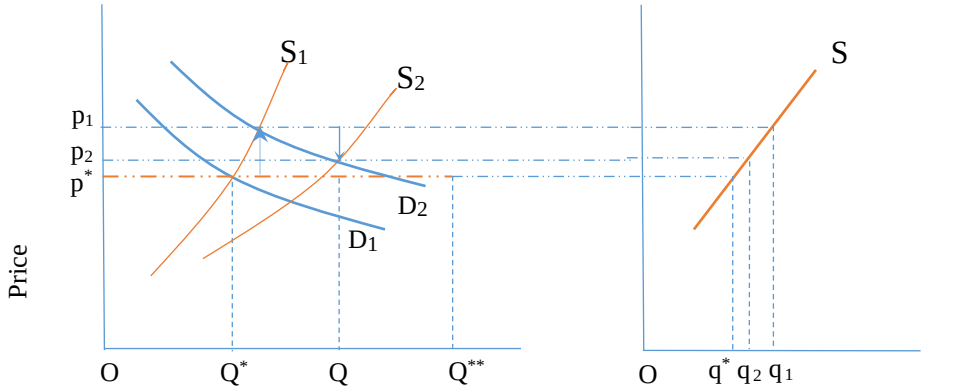
may achieve efficiency in the sense that there are many landlords and high demand. However, market weakness, involving inadequate finance and poor regulation leading to variations in quality etc., may undermine efficiency. Also, much of the demand may be ineffective, so shifting to the demand for OQ_3. This rental demand is significantly large and ineffective; this can be resolved through the interventions discussed in the two cases above. The supply schedule S_3 is largely low quality housing (identified by small units, shared facilities and/or by some other means), with demanding government interventions. OQ_3 supply is made on nonprofit market ventures and assumed to be economically viable given the overall social benefits. There is a finite amount of land and structures devoted to housing that are close to employment opportunities; this may continuously push prices up.

In addition, population growth generates more demand, and the slow process of supply of housing lags behind. q_1 (Figure 8.2(b)). Although market actors (suppliers) are supposed to predict the process of urban and economic growth and form expectations, the demand for housing is increasing in the absence of adequate land and capital.

In principle, one way to control house prices increase (either of ownership or rental properties) is to increase supply. Such a market response is expected to satisfy demand in the market; however, it requires adequate supplies of land and capital. Service land occupied by informal housing in comparator and slum areas can partially meet the demand for land, while local (cooperative) and external funds (e.g. the secondary money market and international development agencies) can fill the gap in the capital.

Market behaviour may be depicted by Figure 8.2(a), in which the horizontal axis represents the quantity of demand and the vertical axis represents the market price. D_1 and S_1 represent initial demand and supply schedules in the market. Given the demand D_1 and the supply S_1, the initial market clearing price, p^*, is determined by Q^*. However, once demand starts increasing, the price goes up to p_1 in response to demand D_2, until a new supply schedule is available in the market. This situation would arise from poor migrants in cities or simply because of the upward mobility of income and overall economic growth of the country. The latter reasons increase demand mainly for ownership and quality rental housing (q_1 and q_2, Figure 8.1(b)), whereas the former may increase demand largely for low quality rental housing for the poor. A short run adjustment would be to raise the supply schedule S_1, which is inelastic and so rises steeply. A longer run adjustment is represented by S_2, this is a shallower line joining p*q*

with p_2 and a value of Q between Q* and Q**. Some economists claim that some US cities and regions offer infinitely elastic supply in the long run. However, a more realistic general case is that even long run elasticity is finite and not that high, particularly for housing with reasonable access to major urban amenities and employment (Malpezzi and Maclennan, 2001; Barker, March 2004; Bank, 1993). However, cyclical disturbances, some affecting price, some affecting supply and some affecting both, are expected. Expectations may not be in line with reality, and there is a risk of shock in the capital market (e.g. the 2008 banking crisis). Therefore a dynamic flow of equilibrium is associated with a growth trajectory, with cyclical disturbances around that.



(a) Housing (unit) stock (b)Supply of housing (unit)

Figure 8.2: Long-term dynamic market equilibria

The line S in figure 8.2(b) represents new housing added to existing stock, which is a function of price. This supply is highly inelastic in the short term and the price of a new lot is dependent on the supply of land and construction finance. It would also fail to estimate the current additional demand caused by the rebuilding of old stock. The additional supplies to the market meet less demand than estimated, so the market may not achieve equilibrium at p_2.

Suppose that p^* is the market clearing price for the supply Q^*, which is also the price for new supply q^* to offset increased demand. This additional amount of housing stock offsets the depreciation of old housing units, as well as new demand added to the market (some types of housing depreciate faster than others). If demand shifted outward (in the absence of necessary supply), as shown by D_2, this would destabilise the market price, and push

the price up (to p_1). If the suppliers (e.g. non-profit intermediaries) moved forward to construct new housing and added to q_2 quantity (which is greater than q^* to the market after a period), the new price would settle at p_2 (with the supply schedule S_2). This is higher than the initial price, p^*, however it is still less than p_1 that increased for shifting demand from D_1 to D_2.

In the same way, house prices would continue to decrease until they reach efficient price p_2 at quantity Q. The market always tries to hold the efficiency by varying supplies (Q^*, Q, and Q^{**}) to offset additional demand. However, market actors (developers) try to achieve profits and avoid disaster (e.g. unsold stock in a slump). Whether the outcome is 'efficient' is questionable. Here a distinction between rents and prices seems obvious. Generally prices are more volatile than rents, because they are asset prices which attract investors with prospects of future capital gains (or losses), as well as a steady income from rents (Bramley et al., 2005). This implies that the profit motives of suppliers would potentially undermine the low-quality housing demand of the rental market and move on to the buying and high-quality rental markets.

8.7 Conclusion

Given the growing trend of the urban poor and the scarcity of urban land, affordable housing policies would perhaps involve vertically extended buildings to maximise use of land. Condominium flats, with shared facilities such as kitchens, toilets and common spaces, may solve the problem of affordability. However, this would require releasing serviced land and available finance to initiate construction. Moreover, generating local resources, facilitating technical support for construction, and distribution and maintenance of housing would require nonprofit intermediaries. Such intermediaries could mobilise the social capital of trust and cooperation, which may establish financial viability and contribute to the success of the venture.

Interventions in either small-scale land development or slum redevelopment may be enforced by zoning to include a proportion of affordable housing, as is the case in the UK under section 106 and with the USA's inclusionary zoning. In addition, intervention would require planning regulations for the compulsory purchase of land which private owners are not developing, with compensation making due allowance for all obligations

and public infrastructure costs. Provision of peripheral land to house the poor might also be a part of a long-term strategy to secure affordable housing for the poor.

The effectiveness of quasi-market interventions lie largely in the mobilisation of social capital to achieve efficiency as well as equity. Non-market measures, such as collective efforts in affordable housing development, are crucial for small-parcel land pooling, allowing the generation of a collective local fund, the sharing of risks related to default repayment, the allocation of housing to the target poor and subsidies for those with the greatest need. All of these would require a depth of trust and cooperation within a group. The effort could extend to actual contribution of labour, as well as to deliberative and decision-making time. Thus, the concept of a housing association may be enable the mobilising of social capital and provide the expertise required by these approaches. Thus social capital might be an important instrument in the quasi-market process of creating a supply of affordable housing for the poor.

In conclusion, the plight of the urban poor can be viewed as the consequence of market policy which has forced them to live in sub-standard housing conditions. Public interventions to create affordable housing might be part of correcting this, with consequences of greater social benefits reflecting the social aims of efficiency and equity. Efficiency is important to maintain quality of service at the lowest possible cost, and equity ensures optimal social benefits for those involved. Free (or subsidised) housing may involve some externalities that are seen in most cases of public good (Musgrave and Musgrave, 1989). Also, government financial constraints are a major concern. Overall social benefits are critical in maintaining social sustainability and economic prosperity. Therefore, conditional altruism and/or concern about social externalities are quite common, and underpin quite a lot of social policy. Specific merit good or conditional altruism arguments lead to specific subsidies for housing. An effective housing policy is one which can give more certainty to key actors in the market, for example through the use of guarantees, where the government may step in as a kind of insurer if things go wrong, but also by maintaining prudent stable monetary policies.

Chapter 9: Conclusion

9.1 Introduction

This study has tried to address the housing problem of the urban poor in Bangladesh, which is linked to low income and limited assets. It sees social capital, in the form of trust and cooperation among residents, as a key element in developing solutions to this and other problems facing the urban poor, and this has been the primary focus of the study. To better understand this, the study has analysed primary data collected from 1,800 households across three cities in Bangladesh to explore the socioeconomic condition and social capital of the study population. A structural analysis of social capital suggests that the potential for cooperation with neighbours is particularly high among the urban poor, and hence some of the market and non-market housing problems constraining the affordable housing supply to the urban poor can potentially be reduced. The findings contribute to urban policy, partly by providing information related to this urban poverty to livelihood development. This chapter first highlights the major findings and their potential implications for the development of policy, with a particular focus on the implications for affordable housing for the urban poor in Bangladesh. The follow-up sections outline some of the study's contributions to academic scholarship, while noting some of its limitations and suggesting avenues for future research.

9.2 Major findings

The study has tried to address the four research questions. The following findings contribute to the answers to those questions:

9.2.1 Urban poverty inflicts social vulnerability on the urban poor in Bangladesh;

9.2.2 A lack of social opportunities is challenging to the urban poor's socioeconomic potential in a way that may affect their social capital;

9.2.3 Neighbours are the urban poor's primary networks in their interdependent way of life;

9.2.4 Trust varies across urban neighbourhoods;

9.2.5 Individuals' perception of cooperation depends on the broader social context;

9.2.6 Some of the market and non-market problems in affordable housing supply could be mitigated by mobilising the social capital of the urban poor.

9.2.1 Urban poverty inflicts social vulnerability (Chapter 4)

The urban poor in Bangladesh have limited access to socioeconomic opportunities, and this inflicts persistent poverty and substandard living conditions on them. Such poverty concentrates the poor in informal housing settlements, largely in slums. Livelihood in informal settlements is accompanied by a certain level of social vulnerability, inflicted primarily by insecurity of tenure, substandard living conditions and disrespectful social attitudes; this vulnerability is higher in large cities, particularly in Dhaka, compared with the other cities of Bangladesh. These findings help to answer Research Question 1: *How are Bangladesh's urban poor placed within the socio-economic structure of cities?*

9.2.2. A lack of social opportunities challenges the urban poor's socioeconomic potential (Appendix B)

The available social opportunities and challenges may define the urban poor's socioeconomic status. The findings imply that income threshold measures (income, education and employment) are weaker markers of social status compared to measures of the urban poor's socioeconomic potential attributed to access to social opportunities. Thus income threshold measures may narrow down the implications for an understanding of social class and its relation to social capital. Together with income threshold measures, thee socioeconomic potential of given social opportunities and challenges could provide a better understanding of social class and social capital. These findings could answer part of Research Question 1: *How is the socioeconomic condition of the urban poor linked to socioeconomic vulnerability?*

9.2.3 Neighbours are the urban poor's primary social networks (Chapter 5)

In the absence of social opportunities, poverty has restricted the scope for socialisation and social exchanges of the urban poor, leading to a potential negative impact on the

formation of social capital. Moreover, the urban poor's social capital is disrupted by social vulnerability attributed to income and risks of eviction. Such disruption destroys the interdependent livelihoods of the urban poor and delays socioeconomic progress.

Under socioeconomic constraints, neighbours represent the most common bonding networks of the urban poor in Bangladesh. Though networks of relatives are important, neighbours are the primary source of daily cooperation in most urban poor areas. Networks of neighbours are facilitated by frequent social interactions over the period of the life course, yielding trust and cooperation, so frequent interactions are important in generating social capital. However, a high volume of networks does not necessarily mean access to economic resources. A strong tie among neighbours can potentially offer both financial and non-financial cooperation; both are essential in urban informal livelihood. However, the urban poor in Bangladesh have limited access to bridging networks, and this limits their ability to access wider resources or exert influence. These findings help to answer Research Question 2: *What is the nature and extent of social capital of the urban poor in Bangladesh*?

9.2.4 Trust varies across urban neighbourhoods (Chapter 6)

Frequent interactions are important to building trust among bonding networks, particularly among neighbours. Individual trust also depends on the established social norms of the neighbourhood; levels of social trust vary across social boundaries. Within the established social norms, individual trust depends less on a household's socioeconomic situation, but short lengths of residency in a neighbourhood potentially undermines trust among neighbours. Such transitory living limits social exchanges, creating looser social ties among neighbours. Individual trust is thus subject to a number of social factors, and its measurement requires consideration of the context in which an individual belongs. The findings partly answer research questions 2 and 3: *How is individual trust contextualised within collective social norms?*

9.2.5 Individuals' cooperation is formed within the broader social context of trust and socioeconomic factors (Chapter 7)

The relationship between trust and cooperation varies widely across networks. However, these relationships among neighbours differ from other bonding networks. A level of implicit or explicit trust exists among the poor, suggesting an interdependent social culture which facilitates a higher level of actual or potential cooperation..

Some of the socioeconomic characteristics of poor households are not directly linked either to individual trust or cooperation; rather, they are associated with group trust and cooperation which indirectly affect individual cooperation. Thus, the measurement of individuals cooperation is contingent on a broader social context, influenced by individual goals as well as the expectations of others. These findings help answer Research Question 3: *How is the individual outcome of social capital contextualised with collective socioeconomic attributes?*

9.2.6 Some of the market and non-market problems in affordable housing supply could be mitigated by mobilising social capital of the urban poor (Chapter 8)

Affordable housing supply for the poor largely depends on access to cheap land and long-term finance. An affordable housing supply potentially lies in a quasi-market context, in which some of the housing market and non-market challenges might be addressed by mobilising social capital. Housing market challenges such as access to construction and market interest rates, and risks of repayment, might be overcome by setting up specialised institutional structures to generate finance and long-term recovery. Cooperative efforts of the beneficiaries could make such programmes financially viable. Non-market challenges, such as small-parcel land pooling, the allocation of housing to the targeted poor, and making the housing market responsive to a particular need, could be addressed by the involvement of the beneficiaries. However, the effectiveness of the institutional structure relies partly on the mobilisation of social capital, which suggests the need for a non-profit intermediary. Such an intermediary could provide support in dealing with these challenges.

Interventions (e.g. vertically extended buildings) for the efficient use of scarce land require large-scale investment, in which an intermediary might be useful in negotiating finance from formal financial institutions or in generating capital from the secondary money market. The role of the intermediary is also critical to release small-parcel serviced land and to mobilise local savings for the construction of housing.

Long-term strategies for a continuous supply of affordable housing to the poor may include providing the poor with peripheral land. Moreover, interventions could be enforced along with planning regulations for the compulsory purchase of undeveloped private land. These findings could answer Research Question 4: *How could social capital address some of the market and non-market barriers to 'affordable housing' supply to the urban poor?*

9.3 Implications for urban policy

Urban policy has always focused on financial or human capital as a strategy for reducing poverty, but perhaps this has under-emphasised the potential of the urban poor's social capital. This study has considered whether this may be useful as a strategic instrument for sustainable urban poverty policies in Bangladesh.

Socioeconomic homogeneity and close physical proximity among the urban poor facilitates social norms and a culture of livelihood dependency, which can reduce social vulnerabilities. Such homogeneity and dependency may suggest that the implications of social capital may require higher recognition in the design of interventions to improve the living conditions of this group. However, such homogeneity has also somewhat excluded the urban poor in cities by restricting their bridging/linking networks.

Living in a poor neighbourhood limits access to social opportunities and hold back socioeconomic prosperity. A sustainable poverty policy may address housing as a strategy to ensure social opportunities and reduce social vulnerabilities.

Interventions to increase income are arguably less effective for sustainable poverty policies than those for neighbourhood development, since, as we have seen, individual outcomes are context-specific. This suggests intervention for a specific context as a potential approach to sustainable poverty reduction, for which social capital may have implications.

Security of tenure might be one such contextual intervention to improve conditions for the urban poor, with potential to enhance social status and reduce social vulnerabilities. This could be meaningful for sustainable urban poverty reduction; it could protect the poor from unpredictable eviction, potentially facilitating higher social capital and greater access to economic resources. This could potentially reduce social costs and facilitate an efficient labour force to support the urban labour market. Contexual intervention could have implications for community strenthening as well as for social wellbeing, and so could provide an important direction for policy.

9.4 Implications for the international development agencies

The implications of social capital as a strategy for improving housing offer opportunities for large-scale investment in Bangladesh and elsewhere. The international development agencies working on behalf of the urban poor in developing countries, such as the World

Bank, the Asian Development Bank and the DFID, may therefore find this study interesting.

9.5 Contribution to literature

9.5.1 Contribution to development literature

These findings might contribute to the existing literature on poverty, providing detailed practical information on the socioeconomic conditions and social vulnerability of the urban poor in Bangladesh. They may also contribute to the sociology literature on the implications of income threshold measures and socioeconomic potentials for the notion of social class.

9.5.2 Contribution to social capital literature

Findings from this study could contribute to the literature on social capital, as outlined below.

It has explored the particular nature and extent of social capital of the urban poor within the specific context of Bangladesh. Increased interactions within social networks do facilitate a greater degree of trust. The positive relationships found between interactions and cooperation are grounded in theory, and thus these findings could help substantiate the theoretical propositions on social capital. However, the weak relationship between network size and the outcomes of social capital might narrow down the context of theoretical proposition concerning social capital.

The socioeconomic and cultural homogeneity of a group could lead to social cooperation and social capital. A positive relationship between household incomes and cooperation also underscores the link between social class and social capital that features in some of the literature.

Social insecurity resulting from insecurity of tenure anda transient lifestyle could disrupt the formation of social capital. However, the formation of social capital is complex due to the interactive relationships among a number of socioeconomic factors. The economic outcomes of social capital are very contextualised, implying that various social factors are interrelated. Such structural relationships mean that a broader social context is required to analyse the different aspects of social capital.

9.5.3 Contribution to housing literature

This study could contribute to the literature on housing, particularly within the context of countries similar to Bangladesh, in the following ways:

Firstly, the quasi-market approach to housing problems is new in Bangladesh to some extent, but it could prove economically feasible in dealing with the urban poor's housing problems. Secondly, the implications of social capital in addressing some of the market and non-market challenges in the housing sector in Bangladesh, and potentially in other developing countries, might contribute to the housing literature by linking together the pure-market and non-market approaches to affordable housing supply.

9.6 Contribution to methodology

The methodological approach used in this study to explore findings might contribute in at least two ways:

Firstly, the study has developed a measurement survey for social capital within the context of a developing country's urban poor. A comprehensive list of variables was adopted in this study based on theoretical propositions that could reflect different aspects of social capital within the context of the urban poor in developing countries.

Secondly, the study has tested some approaches to modelling relationships in quite a challenging context. It has tested both linear and non-linear relationships across different aspects of social capital. The structural models which have been developed to test the theoretical propositions of social capital may contribute to the structural measurement of social capital.

9.7 Contribution to a primary (household level) data set

The study conducted face-to-face interviews with 1,800 households in 18 PSUs across three cities in Bangladesh. Information on the socioeconomic characteristics and different aspects of social capital of the study population has contributed to the analysis of real-world experience. The data set offers baseline information for future studies of the social capital of the urban poor in Bangladesh. This primary data set could also be useful for the future study of urban poverty in Bangladesh.

9.8 Benefits to the study population

This study does not present any direct benefits to the participants themselves. However, the information they provided has helped inform policy for urban poverty reduction, security of tenure and livelihood improvement that might ultimately benefit this group.

9.9 Benefits to the research team

The researchers have generated a nationally representative data set that helps to make reliable findings. Therefore this study offers more value than studies that lack primary-level information. It is hoped that a PhD degree will be attained based on this study, and this is of value to the research team, particularly to the PhD student, whose academic career will be enhanced.

9.10 Benefits to the Institute for Inclusive Finance and Development (InM) and Heriot-Watt University (HWU)

Ownership of the data set collected by this study is retained by the InM and HWU. InM is acknowledged as the funding authority for the data. This is a unique opportunity for the organisation to become known in the international academic arena for its diversified research interests. Research articles from this study are expected to mention HWU as the authors' affiliated institution. Therefore, this study provides good value for money, for the InM's investment in the field survey, and for HWU in exploring real-world problems.

9.11 Limitations of this research

The dimensions of social capital are wide. This study has a specific focus on the micro-level cognitive dimensions of social capital within the particular context of the urban poor in Bangladesh. It investigates the nature and extent of social capital with a focus on this particular group. However, the group is situated within a broader social structure. Thus, some of the findings resulting from the investigation of social capital may lack a necessary analogy with the overall social structure.

Answers to questions about perceptions of the degree of trust and cooperation are obtained in an ordered scale. Social and individual psychological perspectives on a scale may vary across respondents, interviewers, neighbourhoods and cities. These problems may be reduced to some extent by increasing the sample size of the study population. This study is based on cross-sectional data obtained from 1,800 households. A larger

sample size might provide more stability of the parameters estimated, and could in turn provide higher reliability.

The study does not investigate the causal relationship in theoretical propositions in a definitive way. More precisely, it cannot be used to analyse behaviour changes in response to changes in exogenous or intervening factors over a period of time, which would be the ideal context for causal modelling. Therefore, while the findings are indicative, they do not provide a basis for strong inferences about causality

Because of the recursive nature of relationships across different aspects of social capital, identifying relationships between endogenous social capital outcomes and endogenous mediators affecting the outcomes is complex. This may potentially weaken the explanatory power of the parameters revealed in the estimations of models. However, the post-estimation analysis of the tests could increase the models' suitability and justification.

The study acknowledges multiple complex barriers to affordable housing for the urban poor in Bangladesh. However, it has addressed some of those in which social capital might have implications. Affordable housing policy requires an analysis of all aspects.

Lastly, it is worth noting that although the survey has generated a rich dataset, many variables (that are directly or indirectly related to this study) collected from the study population have been left unanalysed because of time constraints and the need to focus on the core research questions.

9.12 Directions for future research

There is a substantial theoretical basis to argue for a causal relationship between social class and other aspects of social capital (social network, trust and cooperation). This study has attempted to explore some of those relationships, considering some socioeconomic variables that might indicate social class. However, a broader understanding of this particular group's social class, with the social structure and its relationship with the manifestation and outcomes of social class, might provide a greater understanding of this relationship. Although there has already been a lot of social capital research in social science disciplines, this relationship is important, and a deeper understanding of social capital is warranted. Further studies may be conducted to explore the reliable variables

that might define social class and its causal effects on the manifestation and outcomes of social capital.

A further survey on the same study population might help explore the causal relationship with various aspects of social capital. A structural approach to the analysis used to explore the contextual effects would require further development of the analytical framework to capture causality, leaving scope to develop the models further.

Appendices

Appendix A: Questionnaire

Institute of Microfinance (InM)

E-4/B, Agargaon Administrative Area
Sher-e- Bangla Nagar, Dhaka-1207, Bangladesh
PABX: +88-02-8181066, Fax: +88-02-8152796
www.inm.org.bd

Potential of Social Capital of Urban Poor

Dear Householder

Researchers at Heriot Watt University, UK are carrying out this research in collaboration with Institute of Microfinance, Dhaka. This research is funded by both the institutions, and aims to find out the level and nature of social capital which might help improve housing of the urban poor.

The questionnaire is prepared for interviewing the selected households living in urban poor clusters in Dhaka, Chittagong and Khulna in Bangladesh. One representative (preferably household head) from each sample household would be taken for interview.

Your house is located within a carefully selected sample cluster and your responses to the questions will be highly valued and are vitally important for this project. We would appreciate your time and effort to answering this questionnaire.

We would like to ask you questions be relevant to this research. Your answers will be kept strictly confidential, private and anonymous. If you are unhappy answering any questions, please leave them blank.

Thank you in advance for your help.

JUNE-AUGUST, 2014

Heriot Watt University
Edinburgh EH14 4AS, UK
Email: tb112@hw.ac.uk

Contact: 01712 131 960

Respondent' name:	Date:
Community Name:	District:
Household Address:	

Section 1: Socio-economic information

[In the first section, I am now going to ask you a number of questions regarding your socio-economic condition. For each of the household members I will ask you questions on their gender, age, education and occupation.]

A. Socio-demographic information

Sl. No.	Name of the household member	Sex	Age (years)	Relationship with HHH	Marital status	Level of education	Type of school (student)	Primary occupation	Nature of job	Distance travelled for job	Monthly Income(Tk.)
1	2	3	4	5	6	7	8	9	10	11	
1											
2											
3											
4											
5											
6											

Code

Sex code: 1=Female, 2=Male, 3=Other

Relationship code: 1=Household head (HHH), 2=Spouse of HHH, 3=Son, 4=Daughter, 5=Father, 6=Mother, 7=Others (please specify)

Marital status: 1=Married, 2=Unmarried, 3=Widow, 4=Others (please specify)

Education code: 1=No education, 2= primary (completed), 3=Secondary(completed), 4=Higher secondary(completed), 5= Bachelor or above(completed)

School type: 1=Government, 2=NGO(National), 3=NGO(international), 4=Community school (manages and run by the community), 5=Others (please specify)

Occupation code: 1=Jobless, 2 = House maid, 3= Rickshaw puller, 3 =Day labourer, 4 = Hawker, 5= Transport worker, 6= RMG worker, 7=professional, 8= Student, 9 = Small businessman (up to Tk. 100,000), 10 = Businessman, 11=Others (please specify)

Job nature: 1=Full-time and permanent, 2= Full-time but temporary, 3= part-time, 4=Daily business, 5=Not applicable (for student)

B: <u>Social identity</u>

[Here I will ask you certain question regarding your communal identity and housing condition.]

1. How long are you living in this community (years)? ☐

2. Have you born in this community?

☐ Yes ☐ No

3. Do you feel that you are a member of this community?

☐ Yes ☐ No

4. What is the type of land on which you are living?

☐ Public ☐ Private

5. What is your tenancy status in this house? [use Code] ☐

6. If tenant, how much is the house rent (BDT)? ☐

7. If tenant, whom do you pay rent? [use Code] ☐

8. How many rooms do you have in your house? ☐

9. How is the average size of room (sq. m)? ☐

10. If migrated, how long did you live in your previous community (year)? ☐

11. How many times have you migrated in last 20 years? ☐

12. What is your reason for migration (answer can be more than one? [use Code] ☐☐

13. What have you lost for being migrated? (Answer can be more than one)

☐ Nothing=1 ☐ Social networks=2 ☐ Cooperation=3 ☐ Trust=4 ☐ Land=5

☐ Property=6 ☐ Others (specify)=7

14. Do you have National Identity card?

☐ Yes ☐ No

Tenancy code:	**Rent collector code:**
1= Living free 2= Living on own land 3= Living on de-facto ownership agreement [i.e. public land leased from third party who has no legal ownership] 4= living on agreement with government for a certain period 5= Tenant (paying rent to owner) 6= Other (please specify)	1= None 2= House owner 3= Third party 4= Other (please specify)

Reasons for moving from previous place:

1= Without (or unknown) reason	8= For water problem
3= Evicted	9= For electricity problem
4= Losing land by river erosion	10= Less income opportunity
5= Higher rent	11= limited school facilities for the children
6= Unfriendly neighbor	12= Encouraged by relatives and friend
7= For gas problem	13= others (please specify)

C. Household assets

[Now, please provide in details of your total assets as listed below.]

Sl. No.	List of assets	Amount /number	Market value (Tk.)
1	2	3	4
1	Agricultural Land (decimal)		
2	Homestead Land (decimal)		
3	Rickshaw/Van		
4	Bicycle		
5	Machineries (Sewing/candle making/ plastic machine etc.)		
6	Furniture (Bed, Table, Chair, Almira, others)		
7	Television		
8	Computer		
9	Cell phone		
10	Jewelry		
11	Refrigerator		
12	Others (please specify)		

D. Monthly Expenditure of the Household

[Now, please provide in details of your monthly expenditure as listed below.]

Sl. no.	Item	Average monthly expenditure (Tk.)
1	2	3
1	How much money do you spend on **food**?	
2	How much money do you spend for the **house rent**?	
3	How much money do you spend on your children's **education**?	

Sl. no.	Item	Average monthly expenditure (Tk.)
4	How much money do you spend for the **electricity bill**?	
5	How much money do you spend for the **water bill**?	
6	How much money do you spend for the **gas bill**?	
7	How much money do you spend for the **transportation**?	
8	How much money do you spend for the **healthcare**?	
9	How much money do you spend for **mobile /communication**?	
10	How much money do you spend for **clothing**?	
11	How much money do you spend for repaying **loan?**	
12	How much money do you spend for **insurance**?	
13	How much money do you spend for the **incidental expenditure** in last one year?	
14	Other expenditure (*please specify*)	

E. <u>Financial debts and savings</u>

[Now, I am going to ask you questions regarding your financial debt and saving and insurance. Please provide in details as listed below.' If you don't have any debt, saving and insurance, you can leave it blank.]

1. How much (total) **loan** do you owe?
   - (i) Moneylender ☐
   - (ii) NGO/MFI (current) ☐
   - (iii) Relatives ☐
   - (iv) Bank ☐
   - (v) Total ☐

2. How much saving do you have?
   1. Cash ☐
   2. NGO/MFI ☐
   3. Bank ☐
   4. *Someety* ☐
   5. Investment (in business)
   6. Lent amount ☐

Section 2: Social vulnerability

A. Vulnerability in respect to income, healthcare, accommodation and social justice

[Now I am going to ask you few questions regarding *vulnerability in respect to income, healthcare, accommodation, and social justice*. Please use the weight code at the bottom for each of the following question.]

- ☐ Possibility of sudden loss of income
- ☐ Possibility of eviction
- ☐ Possibility of flooding
- ☐ Possibility of fire hazard
- ☐ Possibility of house collapse for using weak building materials
- ☐ Possibility of being discriminated in social services (job, education, healthcare, court, public transport)
- ☐ Possibility of being accused for any blame for other's misdeed
- ☐ Possibility of being harassed by others (police, community leader, political leader)
- ☐ Possibility of health damage because of job nature (physical labour, Non-physical labour, or both physical and non-physical labour)
- ☐ Potential health hazard from living environmental

Weight:

5 = Very high possibility	2= low possibility
4 = High possibility	1= Very low possibility
3= Moderate	0= Don't know

B. Vulnerability to use of or experience with certain local public services

[I am now going to ask you about you or your family's use of or experience with certain local public services over the last year.]

Description	Yes=1 No=0	[Yes=1 No=0] If 'yes' did you get the service?	If 'no', what was the reason?
1	2	3	4
1. Has any of your family members sought service from police in last one year?			
2. Has any of your family members sought service from health care center/hospital?			
3. Has any of your family members sought service from Court/justice?			
4. Has any of your family members sought any help from any other govt. service provider?			

Reason code:

0= Don't know	2= Did not listen to you	4= Others, (please specify)
1= Asked for bribe	3= Middle man asked for money	

C. Vulnerability to development participation

Do you agree or disagree that people of your community or around have received or observed any improvement of the social services below in last 5 years?

- ☐ Healthcare
- ☐ Education/school
- ☐ Road
- ☐ Sanitation
- ☐ Electricity
- ☐ Gas
- ☐ Family planning
- ☐ Social safety allowance/cash benefit
- ☐ Legal support
- ☐ Awareness of civil right

5 = Strongly agree	2= Disagree
4 = Agree	1= Strongly disagree
3= neither agree nor disagree	0= Don't know

Section 3: Access to finance

[Now I am going to ask you some questions regarding your access to finance in MFI and formal bank. If you have had any experience, you can leave it blank.]

1. Are you a member of microfinance group? ☐ Yes ☐ No

(*if answer is "No", then switch to Section 4)*

2. How often (*in a month*) does the MFI official visit the borrowers? ☐

3. If you are a microcredit borrower, please answer how long you are involved with, the name of MFI, loan size and how often do the members meet together:

Member ID	**Joining year in the first MFI**	**No. of current involved MFI**	**Current MFI**					
			Loan 1			**Loan 2**		
			Name	Guaranteed Loan amount	Frequency of meeting [code]	Name	Guaranteed Loan amount	Frequency of meeting[code]
1	2	3	4	5	6	7	8	9
1								
2								
3								
4								

Frequency of meeting code:

1=Daily 2=Weekly 3=Fortnightly 4=Monthly 5=Biannual 6=Annual 7=More than a year

4. Have you ever sought loan from bank?

☐ Yes ☐ No

5. If 'yes', did you get loan?

☐ Yes ☐ No

6. If you never approached, do you believe that bank would give you loan?

☐ Yes ☐ No

7. What are the constraints of getting bank loan you think?

☐ 1= Mortgage required ☐ 2= Lack of relevant knowledge

☐ 3= Lack of information ☐ 4= Lack of trust in Bank

☐ 5= Complicated procedure ☐ 6= Others (please specify)

Section 4: Social Capital

A. <u>Scope for socialisation and social interactions</u>

Scope for socialisation

[I am going to ask you a few questions about local community life here in this neighbourhood [name of neighbourhood]

1. How long (in years) have you been living in this community? ☐

2. Are you living in an extended joint family? (If HH are living with parents and brothers or relatives)

☐ Yes ☐ No

3. Are you sharing the house with non-kin?

☐ Yes ☐ No

4. How many families are sharing your house? ☐

5. How many people are living in this house? ☐

6. How many of your relatives (HHs) live in this community? ☐

7. Do your neighbours invite you at special occasion (i.e. at marriage ceremony, Eid/Puja festival)?

☐ Yes ☐ No

8. Where did you celebrate your *Eid/Puja* (festivities) in the last five years? ☐

Festival code: 0=nowhere, 1=within existing community, 2= with my parents'/relatives in village or other place, 3=go to relative's place, 4= other (please specify)

Social interactions

[I am now going to ask you about a number of social activities which you might do – in each case I will ask about how many different people or groups you see, how often and for how long.]

Description	Number	Frequency	Hour/s spent on each visit
1	2	3	4
1. How many of your family members visit mosque/*mondir*?			
2. How many neighbours' houses do you visit?			
3. How many people do you interact with for your works?			
4. How frequent does social-gathering take place within the community?			
5. How frequent do you attend the social-gathering?			
6. How frequent do you attend the friends' gathering?			
7. How frequent do you attend the group meeting?			

Frequency code: 0=none, 1=daily, 2=weekly, 3=monthly, 4=yearly, 5=biennial

B. Social networks

Bonding networks

[I am now going to ask you about contacts you have with relatives, friends, neighbours and others [in this neighbourhood, City, Anywhere?]. Again we are interested in how many contacts you have, who often you are in contact with them, and whether they have helped you in any way.]

Description	Number of persons		Frequency of contact in last one year	Favour received in last one years
	Within community	Outside		
1	2		3	4
1. Do you keep contact with relatives?				
2. Do you keep contact with friends?				
3. Do you have contact with neighbours?				
4. Do you have contact with workmates/colleagues?				
5. Do you have contact with parents of kid's friend?				
6. Do you have contact with community leaders?				
7. Do you have contact with others (*please specify*)?				

Help/Favour code:

1= Helped financially
2= Helped settle dispute and live in this community
6= Helped healthcare support
7= Helped in negotiation for housing arrangement

3= Helped in trouble made by others	8= Helped in getting state services e.g. social safety support, police support
4= Helped in negotiation for utility connection	9= Helped in other means (please specify)
5= Helped get legal support	
Contact code: 1=Daily, 2= Weekly, 3=Monthly, 4=Biannual, 5= Annual, 6=more than a year	

Bridging and linking networks

[I am now going to ask you about contacts you or your family have with people involved in government, politics, business, or other organizations. Again we are interested in how many contacts you have, how often you are in contact with them, and whether they have helped you in any way.]

Description	Number of persons	Frequency of contact in last one year	Favour received in last one years
1	2	3	4
1. Do any of your family members have contact with any political parties?			
2. Do you have any relative having contact with local leader?			
3. Do any of your family members have contact with any professional people?			
4. Does any of your family members have contact with any people owning businesses?			
5. Does any of your family members has contact with utility service agency?			
6. Does any of your family members has contact with non-govt. voluntary support agency? (legal, health, etc. support)			
7. Does any of your family members has contact with NGO/MFI?			
8. Does any of your family members has contact with city council?			
9. Does any of your family members have any contact with government agencies (police, court, railway, hospital, etc.)?			

C: Cultural capital

Culture of participation in religion, politics, voluntary works and social club

[I want to ask you now about whether you or your family members participate in the activities of any groups or institutions, for example religious, political, voluntary or social groups. Again, I am interested in how often you/they take part and any favours or benefits received in consequence.]

Description	Yes=1 No=0	Frequency [Code]
1	2	3
1. Did any of your family members attend any religious group meeting in last one year?		
2. Did any of your family members attend political demonstration in last one year?		
3. Did any member of your family members participate in voluntary works in last one year?		

Description	Yes=1 No=0	Frequency [Code]
1	2	3
4. Did any of your family members attend any social club meeting in last one year??		
5. Did any of your family members attend any social rally (celebration of environment day, Independence day etc.)?		

Frequency code:

1=Daily	2= Weekly	3=Monthly
4=Biannual	5= Annual	6=more than a year

D. Trust in people and organisations

[I want to ask you few questions relevant to trust in person as well as organisation.]

Trust in person

1. Whom would you lend money if asked by the following person (of course, if you have money)? (*Please rank according to priority)*

- ☐ Relative
- ☐ Friend
- ☐ Neighbor
- ☐ Colleague
- ☐ Group member
- ☐ Community leader
- ☐ Political leader
- ☐ NGO Official
- ☐ Religious leader
- ☐ Stranger

2. Whom would you ask to keep an eye on your house while you are going away? (*Please rank according to priority)*

- ☐ Relative
- ☐ Friend
- ☐ Neighbor
- ☐ Colleague
- ☐ Group member
- ☐ Community leader
- ☐ Political leader
- ☐ NGO Official
- ☐ Religious leader
- ☐ Stranger

3. Whom could you ask for the help if in trouble? (*Please rank according to priority)*

- ☐ Relative
- ☐ Friend
- ☐ Neighbor
- ☐ Colleague
- ☐ Group member
- ☐ Community leader
- ☐ Political leader
- ☐ NGO Official
- ☐ Religious leader
- ☐ Stranger

Trust in organisation
[Please mark whether you agree or disagree with the following statement about the agencies.]

4. Local government (e.g. ward council/city corporation, paurashava) provides services to the community as required.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

5. Law enforcing agency (police) provides necessary services when someone requires.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

6. Judiciary is fair to all people.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

7. Water supply authority would help get water connection or other services if someone asks for.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

8. Electricity supply authority would help get electricity connection or other services if someone asks for.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

9. Political parties are working for favouring the poor.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

10. Local NGOs/MFIs working in the community are favoring the poor for their economic development

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

11. International NGOs/MFIs working in the community are favoring the poor for their economic development.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

E. Cooperation

[I am going to ask you now some questions regarding financial and non-financial cooperation within your network.]

Financial cooperation

1. Did any collective financial cooperation take place in the community in last one year?

☐ Yes ☐ No ☐ Don't know

2. If 'yes', please mention the purpose of this cooperation.

---

3. If 'yes', did you take part in that collective cooperation?

☐ Yes ☐ No

4. Did you receive any cooperation from anyone/group in borrowing money in last one year?

☐ Yes ☐ No

5. Did you cooperate (lending money without interest) anyone in last one year?

☐ Yes ☐ No

[If you have received or hoping to receive any financial cooperation from people around you in last one year, please tell me the amount of money you received and your feeling about the level of cooperation.]

Description	Answer		
	Person	Amount (Tk.)	Level of cooperation
1	2	3	4
6. If you received any cooperation, who did cooperate?	(i) Friend		
	(ii) Relative		
	(iii) Neighbours		
	(iv) Group member		
	(v) Colleagues		
	(vi) Parent of kid's friend		
	(vii) Community leader		
	(viii) Others *(please specify)*		
7. Whom would you believe may cooperate at financial emergencies in future?	(i) Friend		
	(ii) Relative		
	(iii) Neighbour		
	(iv) Group member		
	(v) Colleague		
	(vi) Parent of kid's friend		
	(vii) Community leader		
	(viii) Others *(please specify)*		

Cooperation level: 5=Very strong, 4=strong, 3=Moderate, 2=Weak, 1=Very weak, 0=non-cooperation

Non-financial cooperation

'Now I am going to ask you about non-financial cooperation within your networks.'

8. Did any collective non-financial cooperation take place in the community in last one year?

☐ Yes ☐ No

9. If 'yes', please mention the purpose of this cooperation.

---

10. If 'yes', did you take part in that collective cooperation?

☐ Yes ☐ No

11. What are the good things happened in this community in last one year?

---

11. Have you received any non-financial cooperation from anyone in last one year?

☐ Yes ☐ No

12. Did you offer any non-financial cooperation to anyone in last one year?

☐ Yes ☐ No

Description	**Answer**		
	Person	**Type of cooperation**	**Level of cooperation**
1	2	3	4
14. If you received any non-financial cooperation in last one year, who did cooperate?	(i) Friend		
	(ii) Relative		
	(iii) Neighbour		
	(iv) Group member		
	(v) Colleague		
	(vi) Parent of kid's friend		
	(vii) Community leader		
	(viii) Others *(please specify)*		
15. Whom would you believe may cooperate in future?	(i) Friend		
	(ii) Relative		
	(iii) Neighbour		
	(iv) Group member		
	(v) Colleague		
	(vi) Parent of kid's friend		
	(vii) Community leader		
	(viii) Others *(please specify)*		

Cooperation type code:

1= Borrowing household stuff
2= Introducing new work
3= Saving children from potential harm
4= Providing information about support services (govt. social support program, legal support program, educational support program)
5= Taking someone in hospital
6= Support for filing a police case
7= Mediating dispute
8= Housing upgrading/repair/building
9= Others (please specify)

Cooperation level:
5=Very strong, 4=strong, 3=Moderate, 2=Weak, 1=Very weak, 0=non-cooperation

Section 5: Scope for housing improvement/upgrading

[This is the last question. Here, I would ask you few questions regarding housing problems you are experiencing, and whether there is any scope for improvement of housing as well as the living environment.]

1. What are the problems you are experiencing living in this community?

- ☐ The house is not strong enough
- ☐ Higher theft possibility
- ☐ No formal electricity connection
- ☐ No formal water line connection
- ☐ No formal gas line connection
- ☐ No sewer connection
- ☐ Kitchen facility is not good
- ☐ No garbage disposal place
- ☐ Sharing of kitchen
- ☐ Sharing of toilet
- ☐ Muddy living environment in the rainy season
- ☐ Lack of access road to house
- ☐ Unhygienic latrine around
- ☐ Local *mastan* often creates problem
- ☐ Very noisy community
- ☐ Not feeling safe for uncertain accommodation
- ☐ Bad smell around
- ☐ Others (please specify)

2. Do you want to live in an improved housing like a flat with necessary housing facilities in a multistoried building?

☐ Yes ☐ No

3. For how long (years) do you like this flat to live?

☐ **0**=dint know ☐ **1**=<20 ☐ **2**=21-40 ☐ **3**=41-60 ☐ **4**=61-80 ☐ **5**=81-100 ☐ **6**=>100

4. Do you agree or disagree to live in a flat having common kitchen (say, for four families?

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

5. Do you agree or disagree to live in a flat having common toilet (say, for four families?

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

6. Do you agree or disagree that sharing families should take care for these common facilities' maintenances?

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ Have no idea about the agency

7. Would you please say your preference of location for such flat?

☐ Existing community ☐ City's periphery
☐ Around the existing community ☐ Anywhere having job

8. How much can you deposit to a reliable agency at the beginning for availing such a flat (Tk.)?

☐

9. Are you able to repay the rest of the cost for flat over a long period (for instance, 30 years)?

☐ Yes ☐ No

10. Do you want to pay monthly installment for such flat more than what you are paying for your accommodation right now?

☐ Yes ☐ No

11. Whom do you trust most as an intermediary organisation for undertaking the housing improvement project?

☐ Central government agency ☐ Local government
☐ Local NGO/MFIs ☐ International NGOs
☐ Housing developer ☐ Others (please specify)

Signature of the interviewer:

Surrounding community facilities

1. How many primary schools are in this community?

   Government ☐

   Private ☐

2. How many high schools are in this community?

   Government ☐

   Private ☐

3. How many playgrounds/open-spaces are within this community? ☐

4. How many mosques/*mondirs* are around this community? ☐

5. How far (m) is the nearest rail station? ☐

6. How far (m) is the nearest bus stoppage? ☐

7. How far (m) is the city center (CBD)? ☐

Appendix B: Understanding socioeconomic vulnerabilities of the urban poor: A confirmatory factor analysis

Abstract

This article explores the socio-economic opportunities and challenges of a group that might indicate the notion of social class. The Confirmatory Factor Analysis is employed in the primary data collected from 1,800 urban poor households across three cities in Bangladesh to explore whether those markers indicate the latent social class in the same way. The analysis reveals that income threshold measures (income, education, and employment) are weaker markers of social class than the measures of socio-economic potential facilitated by various social opportunities and challenges. Such finding could imply that only income threshold measures may narrow down the notion of social class. Thus, along with income threshold measures, social opportunities, and challenges might be considered as the rational markers of social class. However, such perspective may vary in a greater flexibility between groups.

Keywords: Social class; households' characteristics; social opportunities and challenges; urban poor; Bangladesh; developing countries

1. Introduction

Shared socio-economic potentials and vulnerabilities defining norms of social behaviour are considered in line with the understanding of the concept of 'social class'. When it is discussed with the example of the black American working class or white middleclass, it means that social class is rooted in ethnicity and a particular economic threshold (DiMaggio, 1997; Bourdieu, 1986; Bernstein, 2002; Gates, 1981). It implies social and economic thresholds that dictate socio-behavioural differences are the way social class is understood (Hall, 2008; Akerlof and Kranton, 2000; Fiske and Markus, 2012). Thus, the socio-economic context is important for understanding social outcomes - social relations, trust and co-operation (López-Calva and Ortiz-Juarez, 2014). This article discusses social and economic opportunities and constraints that may constitute social class, to understand differential social outcomes.

The concept of 'social class' has been largely considered to be a basis for analysing social capital (Granovetter, 2005; Bourdieu, 1986). It comes in such a way that social capital depends on the extensity of social relations that are built on social relation within the social boundary. Such boundary define social ties (often referred to as social networks) within a group to facilitate access to and mobilisation of economic resources that enhance

social status (Lin, 1999; Granovetter, 2005). It assumes that social interactions largely take place within the same social boundaries hence, the networks developed are specific to a particular social group (Bourdieu, 1986; Lin, 2001). The underlying association between the extent of social networks and social class is therefore significant in understanding social behaviours.

Theories on social class propose several elements to socio-economic position including income, education and employment (Lin, 1999; Bradley and Corwyn, 2002; Goldthorpe and McKnight, 2004; Barber, 1968; Haug and Sussman, 1971). Economic thresholds may explicitly indicate the notion of a particular social class. However, those factors are influenced by many social variables that are deeply rooted in society's social and cultural norms (Granovetter, 1985).

Social class is variously defined as a difference in preferred lifestyle, social class as a 'life condition' (based on wealth) and 'social status' (based on control over wealth) (Sorenson, 2000; Hollingshead, Fall 2011). The former seems simpler to analyse empirically, however, it rather narrows the notion of social class (Hollingshead, Fall 2011). The latter is complex and requires composite criteria to contexualise the former. Economic factors might largely contribute to the observed construct of social class; however, the associated factors of 'social status' arguably facilitate 'life condition'. Those underlying factors of 'exploitation' that generate social 'opportunities' and 'constraints' thus perhaps give a broader perspective on the notion of social class. This is because a specific set of social opportunities (e.g. low educational opportunities) and challenges (e.g. risk of eviction from one's land) can be available to an identical social group, and varies across social class (Lareau, 1987). Thus, a composite of several indicators (life condition and social status) might be advantageous in giving more information and greater flexibility (Liberatos et al., 1988; Campbell and Parker, 1983) although, such an initiative might obscure an important difference in the relationship between social class and its indicators (Ostfeld and Eaker, 1985).

Though exact delineation between two (immediate) social classes may not be observed, however, different access to desired goods and services depends on social opportunities and challenges. Poor access to income or education of the poor are just two of many such contextual factors that might help to differentiate between groups. It could be argued that income, assets, employment and education are the resources that provide 'life condition' and so largely provide a basis for understanding social class; however, a

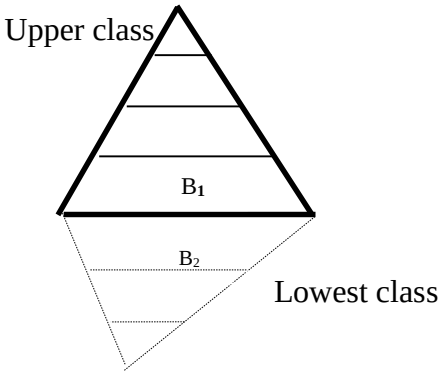
composite (set of) factors of 'life condition' and 'social status' (social opportunities and challenges) might provide a comprehensive expression of the construct of social class.

In this paper, the Confirmatory Factor Analysis (CFA)[1] is employed to validate the indicators used to construct 'latent' variable, social class. The empirical test within the context of the urban poor in Bangladesh may add insight to the existing scholarship on understanding social class. The organisation of the paper is as follows:

- Section 2 briefly discusses the context of the urban poor.
- Section 3 discusses details of the empirical test procedure.
- Section 4 discusses the results followed by a discussion of the implications in Section 5.
- Finally, a conclusion draws on the analysis.

2. The context

Social structure as imagined by the sociologists resembles the pyramidal shape as shown by the bold lines (see Lin, 2001; Murdock, 1949). According to this construct, a few people are at the top while a large mass of the population is at the bottom. Such a social structure perhaps resembles western societies, but hardly represents the societies in Bangladesh accurately, particularly in urban areas (BBS, 2010c). A shadow pyramid perhaps exists, in which the population declines as social classes move downward. It means a portion of the urban population lives at the bottom, numerically similar to the highest class in the social structure (Bashar and Rashid, 2012).



[1] CFA is a kind of principal factor analysis (PFA), but it generates factor score rather than mean score. Each indicator simultaneously determines the 'latent factor' with a comparative factor loading. The relationship which is not accounted in the model is identified as an error.

Figure-5.2.1: Presumptive social hierarchy

Urban populations are largely middle class, however, socio-economic change which facilitates social mobility reshapes social structure over time (Goldthorpe, 1985).

Since the data was collected primarily from poor urban households, the context of the analysis perhaps represents mainly the lowest tiers in the composite structure of Bangladeshi urban social classes. Compared to other groups, these study groups have lower levels of education, occupation and income. According to the survey conducted for this study in 2014, approximately 70% of the heads of household of the urban poor sample had *no education* and, further, 20% were only educated to primary level. While the level of education in the 'comparator' sample is higher, only up to 15% (depending on the economic prominence of each city) of the household heads in the group had a university education. Consequently, the nature of occupations is mainly manual—rickshaw pulling, day labouring or garment work, for example - jobs which are considered to be low social status. Moreover, the average incomes (monthly) of the households of both groups are low and vary between BDT 9,332 (=£ 92) — 11,077 (=£ 108) and 15,119 (=£ 148) — 16816 (=£ 165), respectively. Some 40% of household income at national (urban) level (according to the National Income and Expenditure Survey 2010) is below the average of the study population (BBS, 2010a), however the statistics are not exactly comparable since: (i) the survey year of the study is different from that of the national survey, and (ii) the survey for this study was conducted only in major towns (two metropolitan and one major town), where the household income is presumably much higher than in most of the other towns.

Social opportunities between groups presumably differ in the ways in which social life facilitates social interactions and networks, and in the underlying factors behind economic outcomes. The social infrastructures for spontaneous socialisation and social exchanges that facilitate different access to information and mobilisation of social resources, contribute to differences in social norms and culture (Fukuyama, 1996; Elster, 2000). Such infrastructures provide shared perspectives and views (through frequent interactions that build social relations) within a class boundary and yield a similar pattern of social achievement. Different access to social opportunities leads to inequality in terms of social opportunities (Drèze and Sen, 1999). Such inequalities contribute extensively to divisions between social classes, and are seen in different socio-economic outcomes: in income,

assets, vulnerability, and potential. Those outcomes influence social behaviours—trust and co-operation—that are specific to a particular social group. Having the least access to social opportunities thus leads the urban poor to acquiring a minimal income and education that in turn lead to greater social vulnerabilities (Sobhan, 2010).

3. Analytical framework

We explore each of the above factors' contribution to *latent*[1] social class concept. A latent variable is a non-deterministic function of observed variables (Bollen, 2002). If a factor retains reasonable explanatory power, it is considered to be a marker[2] of social class, otherwise, is dropped from the latent 'social class' model. (However, the factor might still be a valid independent variable for the overall model, or part of another latent concept that is not the same as social class). It is worth noting again here that it is desirable that the factors defining the latent concept are expected to be uni-dimensional that the indicators attributed to the latent are expected to have a minimum level of correlation that explains a reasonable relationship between the indicators and latent. We employ Confirmatory Factor Analysis (CFA) to test this system of equations.

CFA is a type of principal factor analysis which generates factor score rather than mean score of the indicators. Factor loadings of indicators are at the same time determined by their relative significance to the latent variable. CFA does more than Principal Component Factor Analysis. It allows each item to have its own unique variance. That means each indicator variable has a corresponding error term, ε. The error terms enable the variances in responses that are unique to the item and do not reflect the shared variance. The latent variable is shared by the indicators, and the ε*'s* make each item unique. The necessary assumption is that ε*'s* are normally distributed and uncorrelated. Based on this assumption, the construct of social class is shown below:

[1] Bentler PM. (1982) Linear systems with multiple levels and types of latent variables In: KG J¨oreskog and Wold H (eds) *Systems Under Indirect Observation.* Amsterdam: North-Holland, 101–130. defines a latent variable as follows: "A variable in a linear structural equation system is a latent variable if the equations cannot be manipulated so as to express the variable as a function of manifest variables only."

[2] This is a kind of implied causality running from variables to latent function. However conceptually, it may be the other way round, the latent function (Class) is the true cause and the associated variable is more, or as much, a consequence as cause; that is why we suggest the term 'marker'.

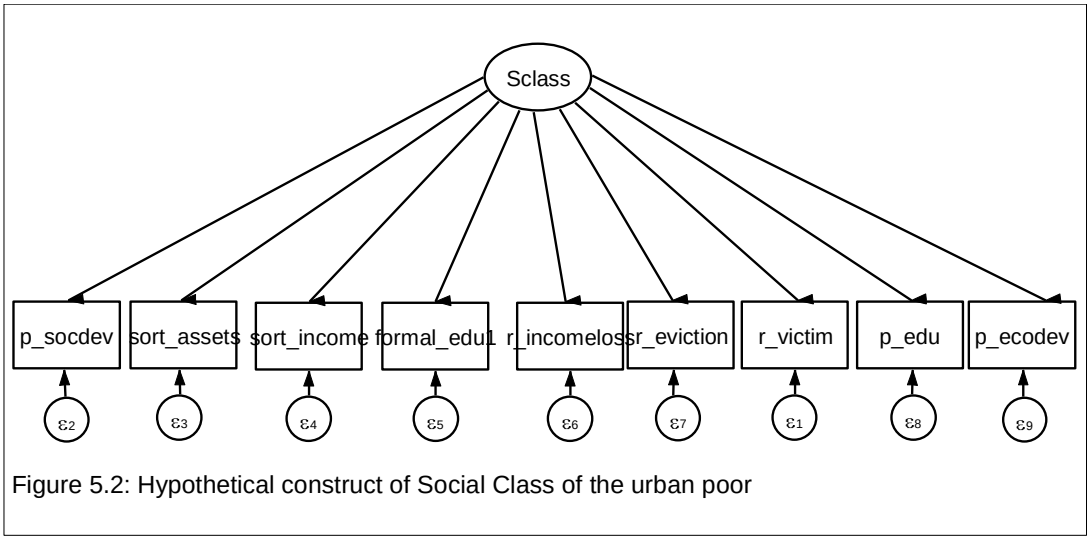


Figure 5.2: Hypothetical construct of Social Class of the urban poor

The latent variable *social class* encompasses nine indicators shown in the schematic diagram. The direction of arrows implies how social class yields observed indicators. That is to say that the way households responded to each of nine indicators depended on their social class. Alternatively, all indicators imply the one-dimensional social class.

The covariances of indicators are summarised by the latent variable and the unique variance of indicators. By isolating shared variances of indicators from their unique variance, we obtained better estimates for social class. Using these assumptions, we ran *maximum log-likelihood* estimations in Structural Equation Modeling (SEM). The estimation software STATA has performed the maximum log-likelihood estimation on a total of 1724 observations. The number of missing observations is 76. The estimation uses list-wise deletion of any observations if none of the responses was recorded. We hypothesise on the construct of social class that income threshold measures (income, assets and education of the head) are better indicators of social class than the proxies for social opportunities (potential and risks). Before beginning the statistical exploration, we presented a brief discussion on the social structure of cities in Bangladesh, to help understand the degree of appropriateness of the findings.

4. Exploring socioeconomic thresholds and social vulnerabilities

As explained above, a set of socio-economic opportunities and vulnerabilities are being used as the markers of social class[1]. The following table lists the summary descriptives (including variable name, number of observations, unique, minimum and maximum value, and label) of nine indicators. The indicators are assumed to have underlying association with the latent (social class) factor.

Variable	Obs	Unique	Mean	Min	Max	Label
sort_assets	1778	6	3.17	1	6	sorted hh assets
sort_income	1797	6	3.55	1	6	sorted income
formal_edu1	1790	5	4.22	1	5	formal education of the household head
r_incomeloss	1779	6	3.28	1	6	risks of sudden income loss
r_eviction	1783	6	3.14	1	6	risks of being evicted from land
r_victim	1773	6	2.64	1	6	risks of victim in public place
p_edu	1777	6	3.19	1	6	potential of edu attainment by the children
p_ecodev	1782	6	3.32	1	6	potential of economic development
p_socdev	1775	6	3.32	1	6	potential of social development

The responses are on a 6-point Likert scale. [The responses on education of the household-head are on a 5-point scale.] The higher value represents the lower level of socioeconomic vulnerabilities or, in other words, a higher social class. Before estimating the relationship between indicators and latent variable, we run factorisation that gives a comparative factor values (Eigen value). It helps understand the possible ways of associating indicators with its latent.

Factor analysis/correlation — Number of obs = 1705
Method: principal-component factors — Retained factors = 2
Rotation: (unrotated) — Number of params = 17

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	4.12535	2.92089	0.4584	0.4584
Factor2	1.20445	0.38545	0.1338	0.5922
Factor3	0.81900	0.04888	0.0910	0.6832
Factor4	0.77012	0.13266	0.0856	0.7688
Factor5	0.63747	0.05501	0.0708	0.8396
Factor6	0.58246	0.06721	0.0647	0.9043
Factor7	0.51525	0.29767	0.0573	0.9616
Factor8	0.21758	0.08927	0.0242	0.9857
Factor9	0.12831	.	0.0143	1.0000

LR test: independent vs. saturated: chi2(36) = 6957.78 Prob>chi2 = 0.0000

[1] There is an issue here that bundling variables together in a scale is implying that class is just something more or less of the variables, whereas the concept of class may be interpreted in terms of discrete groups, which are different, but not necessarily 'more' or less than each other, or not by a known quantum (e.g. occupations, or caste).

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Uniqueness
sort_assets	0.5830	0.5532	0.3541
sort_income	0.4759	0.4002	0.6133
formal_edu1	0.4960	0.5136	0.4902
r_incomeloss	0.6215	-0.3344	0.5019
r_eviction	0.6625	-0.1123	0.5485
r_victim	0.4375	-0.5672	0.4868
p_edu	0.8443	-0.0395	0.2855
p_ecodev	0.8814	-0.0984	0.2135
p_socdev	0.8980	-0.1305	0.1765

The results from factorisation indicate that the first factor yields better explanatory power than the second factor, with an Eigen value of 4.13. That implies 41% of total variances over all nine indicators is explained by the first factor. Generally, an Eigen value of 1.0 or greater is recommended (Acock, 2013). The Eigen value of the second factor is just above the cut-off line 1.0. Under such ground, the indicators in Factor1 explains the model better than Factor 2.

The loadings of the indicators explain how social class accounts for the responses to each of the nine indicators. According to the estimates, nine indicators in Factor 1 have loadings between .44 and .90 that are higher than the recommended cut-off value off .40, while a cut-off value .30 is also recommended (Costello and Osborne, 2005). The loading on 'risks of harassment' has the lowest value, however, this value is still higher than the recommended value. That means a significant association of that variable is accounted for by social class. All other indicators have higher values than 'risk of harassment' and can be explained similarly. Therefore, a higher Eigen value of Factor 1 and high factor loadings allow us to consider all indicators in the system. Moreover, dropping an indicator from the system provides little difference to the estimates, rather it restricts flexibility by way of limiting the association of each indicator with its latent.

The 'uniqueness' in last column represents the error variance of each indicator. For instance, 61% of the variances of 'household income' are not accounted for by the solution of Factor 1, suggesting that there is a substantial variance in income which is random/contingent and not so clearly indicative of social class as other factors. Similarly, 17% of the variances of 'social development' indicator are not accounted for by the solution.

Principal Component Factor analysis assumes that these values of uniqueness are close to 0. However, the alternative method for performing exploratory factor analysis, such as the default principal factor method, does have flexibility in such assumption, yet produces similar results. The uniqueness score on 'income' is high, even when factorisation is run separately in 'poor areas' and 'comparator areas' samples. It might suggest that there is a case for including both class and income in the structural model, or class and the part of income which is not correlated. Nonetheless, the loadings on income, assets and education in Factor 2 are associated with the latent in a way which contrasts with the way other indicators do. It suggests that the way in which economic thresholds (life condition) account for social class might be different from the social opportunities (exploitation).

4.1 Alpha reliability test

The Alpha reliability test gives a score using the unstandardised variance and covariance. We estimate unstandardised results using unstandardised variables. The following table lists the various estimates that the test has produced.

			item-test	item-rest	interitem		
Item	Obs	Sign	corr.	corr.	cov.	alpha	Label
sort_assets	1778	+	0.598	0.462	.878	0.830	sorted hh assets
sort_income	1797	+	0.519	0.386	.927	0.837	sorted income
formal_edu1	1790	+	0.498	0.398	.964	0.834	forml education of hhh
r_incomeloss	1779	+	0.642	0.511	.848	0.824	risk of income loss
r_eviction	1783	+	0.692	0.553	.797	0.821	risk of eviction
r_victim harass.	1773	+	0.480	0.344	.94	0.840	risk of being victim of
p_edu	1777	+	0.800	0.727	.790	0.800	potential of edu attain.
p_ecodev	1782	+	0.840	0.783	.778	0.795	potential of econ. dev.
p_socdev	1775	+	0.864	0.808	.745	0.789	potential of social dev.
Test scale					.852	0.8372	mean(unstandardized)

The Alpha value is .84, which is quite satisfactory and substantially higher that the standard minimum value .70. That means the indicators pass the Alpha reliability test. Moreover, Alpha values are reduced substantially each time if any of the indicators is dropped from the model. It implies there is a rationale for thinking that each of the indicators accounts for social class. The summary of the model is presented below, based on nine indicators which account for social class:

```
-------------------------------------------------------------
                          Class
-------------------------------------------------------------
      Percentiles      Smallest
 1%     1.333333             1
 5%     1.666667             1
10%            2             1       Obs                1797
25%     2.555556      1.111111       Sum of Wgt.        1797

50%     3.222222                     Mean           3.319355
                        Largest      Std. Dev.      1.010462
75%     4.111111      5.666667
90%     4.777778      5.666667       Variance       1.021034
95%            5      5.666667       Skewness       .1335625
99%     5.444445      5.888889       Kurtosis       2.311987
-------------------------------------------------------------
```

Based on 1797 observations, the results provide some critical values of standard deviation 1.01 from the mean value, Skewness 0.13 and Kurtosis 2.31. The variance is presented graphically in the histogram diagram below.

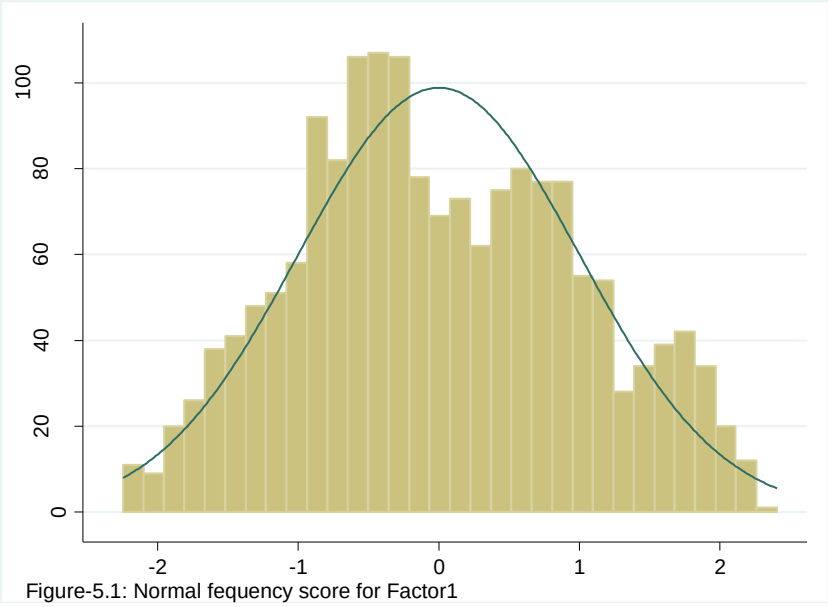


Figure-5.1: Normal fequency score for Factor1

4.2. Generating factor scores

We generated the *social class* scale based simply on the mean score of indicators. It gives equal significance to all indicators. However, the items are not τ ("tau") equivalent, because the indicators are different in importance. The indicators accounting for higher importance would have higher weight at time in generating the score. Thus factor score gives a better score since it is weighted on the salience of indicators. Factor scores are standardised, with 0.0 mean and 1.0 variance, and are presented in the table below.

Scoring coefficients (method = regression)

Variable	Factor1	Factor2
sort_assets	0.14133	0.45928
sort_income	0.11536	0.33228
formal_edu1	0.12024	0.42641
r_incomeloss	0.15066	-0.27766
r_eviction	0.16060	-0.09321
r_victim	0.10606	-0.47095
p_edu	0.20467	-0.03281
p_ecodev	0.21365	-0.08171
p_socdev	0.21769	-0.10838

A total of 1705 observations in our study populations responded to all nine indicators in the model. The estimates show the factor coefficients which are similar to standardised β-weights. The 'potential for social development' has a β-weight of 0.22, and 'income' has a β-weight of 0.12. That means that 'potential for social development' accounts for approximately double loading compared to that of 'income'. It makes sense because in unstandardised estimations, the loading on social development (0.90) is double that of income (0.48). That is why the factor score is more reliable than mean score.

5. Results

Taking only five iterations, STATA *maximum likelihood* estimators have maximised the functions. The estimation has reported three sections, labelled *measurement*, *variance* and *covariance*. The *measurement* provides estimates of the factor loadings and their standard errors and z-test for each estimate, along with the 95% confidence interval. The *variance* shows the margin of error for each of the indicators that has not been captured in the model. Equally, the *covariance* shows how one indicator is correlated with another. In unstandardised solutions, the reference indicator ('potential of social development') gets the model implied loading (1.0) to solve the log-likelihood estimation. In standardised solutions, the model generates separate loading for each of the indicators in the simultaneous function.[1] A standardised composite solution for the total sample ('poor areas' and 'comparators areas' samples) ha been shown in the figures below on the model specified before. The standardised and unstandardised solutions

[1] The standardised loadings are computed by multiplying the unstandardised coefficients by the model implied standard deviation of the markers divided by the standard deviation of social class.

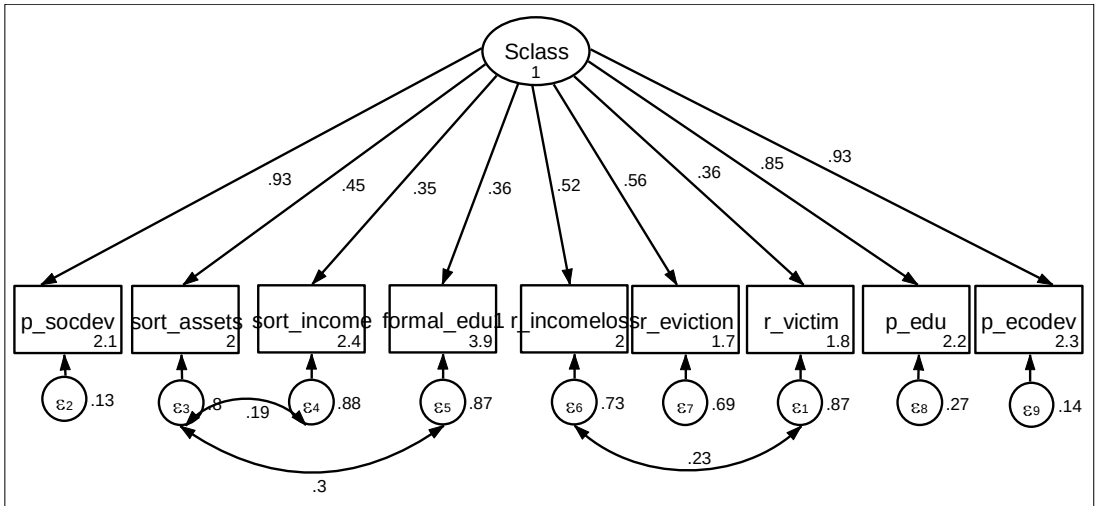


Figure : Assumed construct of Social Class based on nine observed soci-economic variables

According to the estimates, the standardised coefficient for social class->'potential for social development' is 0.93 (standard β-coefficient) and its standard error (ε_i) is 0.13, keeping all other indicators constant *(ceteris paribus)*. This means that it is likely that the 'potential for social development' is 0.93 standard deviation, higher if the latent predictor increases by one standard deviation. The estimates are significant at p<0.00 with a z-statistic 239.19 for the solution. That means that the chances of obtaining the estimates are 95 out of 100, if sampling is drawn from the same study population. However, estimates vary little between the 'poor areas' and 'comparator areas' samples -.91 and .89, respectively. Similar loading can also be seen in social class->'potential for economic development'— β-value is .93—however, unlike the 'potential for social development', the value is a little higher in the 'comparator areas' sample. Moreover, the estimate for the 'potential for children's education' is also high, at .87, particularly in the 'poor areas' sample.

β-values for income, assets and 'education of head of households' is less than a half of socio-economic potential indicators. Income, assets and education of household head are likely to be .35, .45 and .36 standard deviations higher, for one standard deviation increase of latent predictor, *ceteris paribus*. However, the value for 'household assets' in the 'comparator areas' is only one third of the value in 'poor areas', though it is the same for

‘income’ in both areas. Moreover, the estimate for the ‘education of household head’ is also less, particularly in the ‘comparator areas’.

β-values for three risk indicators in the model varies between .36 and .56, values for ‘income loss’ and ‘eviction’ are substantially higher than that for ‘harassment’. However, large variation in values is evident between ‘poor areas’ and ‘comparator areas’. The values are less in the ‘poor areas’ sample, particularly for ‘eviction’ and ‘harassment’—.37 and .24, respectively in ‘poor areas’ compared with .51 and .47 in ‘comparator areas’. Discussion on the goodness of fit has been presented in Appendix.

Table 1: Final results for CFA on social class (All loadings and covariances are significant at $p < 0.001$)

	All		Sample		Comparison	
	Unstand.	Stand.	Unstand.	Stand.	Unstand.	Stand.
Loading						
p_socdev:	1.00 (fixed)	0.93	1.00(fixed)	0.91	1.00(fixed)	0.89
sort_assets:	0.50	0.45	0.37	0.34	0.15	0.12
sort_income:	0.35	0.35	0.21	0.22	0.32	0.23
formal_edu1:	0.27	0.36	0.14	0.24	0.25	0.20
r_incomeloss:	0.60	0.52	0.54	0.45	0.75	0.49
r_eviction:	0.74	0.56	0.49	0.37	0.64	0.51
r_victim:	0.36	0.36	0.25	0.24	0.63	0.47
p_edu:	0.87	0.85	0.89	0.85	0.82	0.72
p_ecodev:	0.91	0.93	0.93	0.91	1.03	0.92
Variances						
error.p_socdev	0.31	0.13	0.40	0.17	0.24	0.20
error.sort_assets	2.06	0.80	2.07	0.88	1.50	0.98
error.sort_income	1.88	0.88	1.74	0.95	1.90	0.95
error.formal_edu1	1.01	0.87	0.57	0.94	1.52	0.96
error.r_incomeloss	2.05	0.73	2.23	0.79	1.76	0.76
error.r_eviction	2.51	0.69	2.85	0.86	1.18	0.74
error.r_victim	1.82	0.87	2.05	0.94	1.35	0.77
error.p_edu	0.59	0.27	0.59	0.28	0.59	0.47
error. p_ecodev	0.29	0.14	0.31	0.15	0.18	0.14
Social class	2.11	1.00 (fixed)	1.93	1.00(fixed)	0.98	1.00(fixed)
Covariances						
e.sort_assets*e.sort_income	0.36	0.19	0.31	0.16	0.25	0.15
e.sort_assets*e.formal_edu1	0.43	0.30	0.22	0.20	0.56	0.37
e.r_incomeloss*e.r_victim	0.44	0.23	0.49	0.22	0.33	0.22
N		1705		1053		649
Model vs. saturated: Chi^2(24)		239.19		183.71		174.98

5.1. Covariance of residuals

The post-estimation suggests three covariances of the variances. These are covariances of variances between assets and income, assets and education, and the risks of income loss and harassment. Each of these covariances gives the model a better fit when it was taken individually. The covariance of the residuals of nine indicators also provides a notion of model structure, and is presented below. Covariances between two residuals are both positive and negative.

$$\begin{pmatrix} \varepsilon_{11} & \cdots & \varepsilon_{19} \\ \vdots & \ddots & \vdots \\ \varepsilon_{91} & \cdots & \varepsilon_{99} \end{pmatrix} = \begin{bmatrix} 0.000 & & & & & & & & \\ 0.066 & 0.000 & & & & & & & \\ -0.246 & 0.002 & 0.034 & & & & & & \\ -0.053 & -0.065 & 0.089 & 0.000 & & & & & \\ -0.038 & 0.000 & 0.040 & 0.205 & 0.000 & & & & \\ 0.000 & 0.049 & -0.041 & 0.098 & 0.020 & 0.000 & & & \\ 0.151 & 0.044 & 0.210 & 0.203 & 0.001 & 0.038 & 0.000 & & \\ -0.058 & -0.019 & 0.070 & -0.003 & 0.039 & -0.104 & -0.051 & 0.000 & \\ -0.035 & 0.001 & -0.049 & 0.025 & -0.030 & -0.033 & -0.074 & 0.029 & 0.000 \end{bmatrix}$$

5.2 Goodness of fit

We ran the post-estimation command that provides extended statistical information regarding the model's exactness of fit. In the first section of the results, we have a $\chi^2(\text{chi}-\text{squared})$ of 239 with 24 degrees of freedom (at p=0.00). The χ^2 value compares the estimated model to a saturated model that has no degree of freedom. Log-likelihood estimation produces the covariance matrix of nine indicators and picks the combination of parameter estimates that does the best job of reproducing the covariance matrix. There are 45 elements in the covariance matrix. For the unstandardised solution, the estimation requires *eight* factor loadings plus *nine* error variances plus *three* covariances, plus one variance of social class. A standardised solution requires *nine* factor loadings plus *nine* error variances and *three* covariances. Thus we have (45-21) =24 degrees of freedom. In our chi-squared test, $\chi^2(24) = 239.19$ at $p = 0.00$.

The widely used measure of Comparative Fit Index (CFI) indicates whether the model perfectly reproduces the entire 45 pieces of information in the covariance matrix. In our model, CFI reports that the model performed an accuracy level 97% which is better than the baseline model that assumes no relationship among observed indicators. This

percentage exceeds the recommended cut-off value of 0.95. Therefore, the model has perfectly reproduced the entire covariance matrix.

Root Mean Squared Error (RMSE) of approximation is also a measure of model fitness. It measures how much has error occurred for each degree of freedom. Our model reports the RMSE is 0.073 and at the 90% confidence interval ranges from 0.064 to 0.081, indicating that the model is a reasonable fit. For a good fit, the model would require an RMSE value equal or less than 0.05 at $p < 0.001$.

Another index for measuring model fitness is the Standard Root Mean Squared Residual (SRMR). It measures how close the model comes, on average, to reproducing each correlation. Our estimation-produced SRMR is 0.034. It means that, on average, the estimation comes within 0.034 of reproducing each correlation among the nine indicators, whereas the recommended SRMR is 0.08. Given the average correlation, SRMR confirms an excellent fit.

6. Discussion and conclusion

High values of coefficients are supposed to reflect the strong relationship between 'social class' and the 'indicator'. In that sense, the relationship between socio-economic potential and social class is stronger than the measures of income threshold or risks. That means social class of the study population might be reflected in the social, economic and educational potential of the urban poor. The relationship between social class and the perception of socio-economic development potential, particularly in the fields of healthcare, living environment and education, is important. Such an explanation might be particularly appropriate when analysing social class among the urban poor in a context such as Bangladesh.

The relationship between social class and income threshold measures is weaker in the study population, compared to measures of socio-economic potential. That means only income, assets, employment, or education might not indicate a complete notion of social class. Moreover, there are variations in the way measures of income threshold are reflected in social class in different contexts. However, the reflection of social class in household's assets might differ across contexts, and might be a better indicator within the context of the urban poor, which might not be a better indicator in other contexts. Thus,

income might represent an important indicator for social class, but assets might also offer a notion of social class. Similarly, the nature of the household head's employment and education could also have bearing on the notion of social class.

The relationship between the measures of social risks (constraints) and social class seems significant. It is stronger than income threshold indicators. However, the proxies have weaker loading than those of socio-economic potential proxies, although the strong relationship might imply a rationale for considering such measures in order to understand social class. Such measures of risk are presumably linked with income threshold measures. A lack of social opportunities inflicting socio-economic risks and vulnerabilities is related to poor income, risk of eviction, discrimination and social harassment. Perhaps, linking these risks and vulnerabilities with social class is more or less explicit.

In conclusion, it is tempting to state that, along with income threshold measures, social opportunities (facilitated by various socio-economic potentials and vulnerabilities) might be the rational indicators for analysing social class. This perhaps provides a broader perspective and greater flexibility in understanding a particular group's social class structure. Social opportunities vary across social contexts and constraints that come from various sources, and potentially have implications for the notion of social class.

Appendix C: Chapter 6

Table C.1: Trust in bonding networks regarding 'lending money'

Dependent variable: Degree of trust in financial lending (OLS estimation)

Network		Standardised *Beta*-coefficient				Obs.^	*Adj*- R^2	RMSE
		Number of networks	Freq. of contact	*Log*-income	Living period			
Relative	*All*	.02	.11***	.97***	.16***	1680	0.99	0.84
	Poor	.01	.10***	.94***	.14***	1021	0.99	0.76
	Comparator	.06	.08	.88***	.15***	655	0.99	0.90
Friend	*All*	-.04	-.22***	.55***	.08**	842	0.98	1.05
	Poor	-.07	-.22***	.45***	.05	445	0.98	1.07
	Comparator	.01	-.29***	.60***	.12**	394	0.98	0.96
Neighbour	*All*	.01	.18***	.73***	.10***	1592	0.99	0.91
	Poor	.03	.18***	.65***	.03	957	0.99	0.91
	Comparator	-.12**	.20***	.76***	.16***	631	0.99	0.87
Co-worker		.01	-.07	.44***	.08	486	0.98	1.05
Community leader		-.04	-.16	.37***	.29***	98	0.96	0.99

***99%levelof confidence; **95% level of confidence and; * 90% level of confidence
^ Number of responses on a particular network varies across the households.

Table C.2: Trust in bonding networks regarding 'looking after house' in absence

Dependent variable: Degree of trust (OLS estimation)

Network		Standardised *Beta*-coefficient				Obs.	*Adj*- R^2	RMSE
		Number of network	Freq. of contac	*Log*-income	Living period			
Relative	*All sample*	-.06*	.01	.53***	-.01	1295	0.98	1.15
	Poor	-.03	.01	.47***	-.01	799	0.98	1.14
	Comparator	-.08	-.04	.55***	-.03	493	0.98	1.11
Friend	*All*	-.04	-.23***	.48***	.06	669	0.98	1.20
	Poor	-.10*	-.21***	.38***	.05	367	0.98	1.31
	Comparator	.05	-.30***	.56***	.08	299	0.99	1.03
Neighbour	*All sample*	.03	.11***	.9***	.16***	1605	0.99	0.80
	Poor	-.00	.11***	.78***	.07*	955	0.99	0.73
	Comparator	-.00	.13**	1.0***	.24***	646	0.99	0.75
Co-worker		-.06	-.23***	.42***	.07	379	.98	1.10
Community leader		.05	-.01	.24***	.23**	98^	.92	1.45

***99%levelof confidence; **95% level of confidence and; * 90% level of confidence

Table C.3: Trust in bonding network ‘in emergency helps’

Dependent variable: Degree of trust (OLS estimation)

Network		Standardised *Beta*-coefficient				Obs.	*Adj*-R^2	RMSE
		Num. of networ	Freq. of conta	*Log*-income	Living period			
Relative	*All*	.03	.08**	.80***	.11***	1648	0.99	0.92
	Poor	-.03	.10***	.78***	.12***	1002	0.99	0.84
	Comparator	.06	.00	.74***	.07	642	0.99	0.98
Friend	*All*	.00	-.25***	.56***	.03	826	0.99	0.99
	Poor	-.04	-.34***	.47***	-.03	437	0.98	1.02
	Comparator	.06	-.17***	.62***	.08	386	0.99	0.91
Neighbour	*All*	.01	.15***	.61***	.10***	1619	0.99	1.02
	Poor	.03	.14***	.56***	.06	965	0.99	1.02
	Comparator	-.10**	.18***	.61***	.12**	650	0.99	0.99
Co-worker		.03	-.10**	.38***	.07	486	0.97	1.18
Community leader		.15	-.03	.29***	.29***	100	0.95	1.19

***99%levelof confidence; **95% level of confidence and; * 90% level of confidence

Table C.4: Trust in civic organisations

Dependent variable: Degree of trust (OLS estimation, equation 6.1)

		Standardised *Beta*-coefficient						
;ust in		Number of	Freq. of	*Log*-incom	Living period	Obs.	*Adj*- R^2	RMSE
Local	*All*	.00	-	.19***	-	948	0.86	1.14
)vernment	*Poor*	.18***	-	.17***	-.08**	557	0.86	1.40
	Comparat	-.06	-.01	.17***	-.07	387	0.87	1.47
Police	*All*	-.04	.16**	.12***	.05	949	0.88	1.46
	Poor	.09**	.15**	.09***	.06	558	0.85	1.56
	Comparat	-.12**	.22**	.13***	.08	387	0.92	1.27
Law-	*All*	-.03	.11**	.12***	.00	949	0.85	1.57
)urt/justice	*Poor*	.12***	.09**	.10***	-.01	558	0.82	1.65
	Comparat	-.11**	.21**	.12***	.09*	387	0.90	1.37
Water supply	*All*	-.06*	-.02	.15***	.06*	950	0.84	1.64
ıthorities	*Poor*	-.01	-01	.11***	.10**	558	0.81	1.67
	Comparat	-.11*	.03	.16***	.05	388	0.89	1.52
Electricity	*All*	-.12***	-	.24***	.04	950	0,92	1.34
ıpply	*Poor*	-.14***	-	.19***	.04	558	0.89	1.48
ıthorities	*Comparat*	-.19***	-.04	.30***	.06	388	0.96	1.04
Political	*All*	-.02	-	.19***	.01	950	0.85	1.36
ırties	*Poor*	.08*	-	.18***	.00	558	0.84	1.38
	Comparat	-.05	-	.17***	.04	388	0.86	1.31
Local NGOs	*All*	.01	.08**	.18***	-.01	949	0.90	1.44
	Poor	.06	.07*	.18***	-.05	558	0.92	1.38
	Comparat	.00	.07	.16***	.01	387	0.89	1.47
International	*All*	.06*	-	.18***	-	949	0.84	1.74
GOs	*Poor*	.15***	-.07*	.17***	-	558	0.86	1.69
	Comparat	.05	-.09*	.16***	-.06	387	0.83	1.72

***99%levelof confidence; **95% level of confidence and; * 90% level of confidence

Table C.5: Marginal coefficients (Trust in lending money)

Variable	Logit model marginal coefficient (dy/dx) (Equation 6.3)				Probit model marginal coeffici (dy/dx) (Equation 6.3)			
	level7	level8	level9	level10	level7	level8	level9	level
Number of neighbours	.00	.00	-.00	-.00	.00	.00	-.00	-.00
Freq. of contact	-.00***	-.04***	.01**	.04***	-.01**	-.04***	.00**	.04*
(Log) income	.00	.01	-.00	-.01	.00	.01	-.00	-.01
(Log) asset	.00***	.02***	-.00**	-.02***	.00***	.02***	-.00**	-.02*
Living period	.00	.00	-.00	-.00	.00	.00	-.00	-.00
Risk of eviction	-.00**	-.01**	.00*	.01**	-.00**	-.01**	.00	.01*
Microfinance membership (yes=1; no=0)	-.01**	-.04**	.00	.04**	-.01**	-.04**	.00	.04*
Community type (poor=1; comparator=0)	.01***	.07***	-.01	-.07***	.01***	.06***	-.01	-.07*
Category of city (Dhaka-1; Chittagong=2; Kushtia=3)	-.00**	-.02**	.00*	.02**	-.00**	-.02**	.00	.02*
Probability	.02	.19	.61	.18	.02	.19	.61	.18

Table C.6: Marginal coefficients (Trust in look after house)

Variable	Logit model marginal coefficient (dy/dx) (Equation 6.3)			Probit model marginal coefficient (dy/dx) (Equation 6.2)		
	level8	level9	level10	level8	level9	level10
Number of neighbours	.00	.00	-.00	.00	.00	-.00
Freq. of contact	.00	.00	-.00	.00	.00	-.00
(Log) income	.01	.02	-.00	.01	.02	-.03
(Log) asset	-.00	-.00	.00	-.00	-.00	.00
Living period	-.00	-.00	.00	-.00	-.00	.00
Risk of eviction	-.01***	-.02***	.03***	-.01***	-.02***	.03
Microfinance membership (yes=1; no=0)	.01	.02	-.02	.01	.02	-.03
Community type (poor=1; comparator=0)	.03***	.09***	-.13***	.04***	.08***	-.12***
Category of city (Dhaka-1; Chittagong=2; Kushtia=3)	.01**	.02**	-.03**	.01**	.02**	-.03**
Probability	.03	.11	.84	.03	.11	.84

Table C.7: Marginal coefficients (Trust for emergency help)

Variable	Logit model marginal coefficient (dy/dx) (Equation 6.3)				Probit model marginal coefficient (dy/dx) (Equation 6.3)			
	level7	level8	level9	level10	level7	level8	level9	level1
Number of neighbours	.00*	.00*	.00	-.00*	.00	.00	.00	-.00
Freq. of contact	-.01**	-.03**	-.01*	.04**	-.01**	-.02**	-.00*	.04
(Log) income	.00	.01	.00	-.02	.00	.01	.00	-.02
(Log) asset	.00**	.01**	.00**	-.01**	.00**	.01**	.00**	-.01
Living period	.00	.01	.00	-.01	.00	.00	.00	-.01
Risk of eviction	-.00***	-.01***	-.00**	.02***	-.00***	-.01***	-.00**	.02
Microfinance membership (yes=1; no=0)	-.00	-.01	-.00	.02	-.00	-.01	-.00	.02
Community type (poor=1; comparator=0)	.02***	.06***	.02**	-.09***	-.02***	.05***	.01**	-.09
Category of city (Dhaka-1; Chittagong=2; Kushtia=3)	.00	.00	.00	-.01	.00	.00	.00	-.00
Probability	.03	.17	.53	.26	.04	.17	.53	.26

Trust in Neighbours

```
***Ordered Logit and Probit estimation
. ** Dependent variable has 10 categories denoted 1---10(least trusted to highest trusted,
however some of the categories are not responded)
```

D.6.1. **trust in neighbours 'lending money', (s4_2)

```
. *dependent variable

. global ylist ftrust_nei
. *explanatory variables
. global xlist nneigh freq_nei logincom logasset liv_period r_eviction mfi_mem ctype city_cat

. *Ordered logit model coefficients
. ologit $ylist $xlist

Iteration 0:   log likelihood = -1608.4324
Iteration 1:   log likelihood = -1573.2414
Iteration 2:   log likelihood = -1572.8927
Iteration 3:   log likelihood = -1572.8925

Ordered logistic regression                     Number of obs   =       1545
                                                LR chi2(9)      =      71.08
                                                Prob > chi2     =     0.0000
Log likelihood = -1572.8925                     Pseudo R2       =     0.0221

------------------------------------------------------------------------------
  ftrust_nei |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      nneigh |  -.0107305   .0112602    -0.95   0.341    -.0328001    .0113392
    freq_nei |   .2667786   .0867238     3.08   0.002     .0968032    .4367541
    logincom |  -.0378565   .0985332    -0.38   0.701    -.2309781    .1552651
    logasset |  -.1357723   .0283042    -4.80   0.000    -.1912475   -.0802971
  liv_period |  -.0232196   .0360138    -0.64   0.519    -.0938054    .0473662
  r_eviction |   .0693734   .0327765     2.12   0.034     .0051326    .1336142
     mfi_mem |   .2689147   .1196136     2.25   0.025     .0344763     .503353
       ctype |  -.4986058   .1367866    -3.65   0.000    -.7667027    -.230509
    city_cat |   .1625309   .0664853     2.44   0.015     .0322221    .2928397
-------------+----------------------------------------------------------------
       /cut1 |  -8.170108   1.190542                     -10.50353   -5.836689
       /cut2 |  -5.094623   .9699272                     -6.995646   -3.193601
       /cut3 |  -2.734795   .9576384                     -4.611732   -.8578585
       /cut4 |   .1240558   .9545164                     -1.746762    1.994874
------------------------------------------------------------------------------

. *Ordered logit marginal effects
. mfx, predict (outcome (6))

Marginal effects after ologit
      y  = Pr(ftrust_nei==6) (predict, outcome (6))
         =  .00118867
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0000127      .00002    0.79   0.429  -.000019  .000044   5.82006
freq_nei |  -.0003167      .00025   -1.29   0.197  -.000798  .000165   1.16764
logincom |   .0000449      .00012    0.37   0.711  -.000193  .000282   9.34467
logasset |   .0001612      .00012    1.36   0.173   -.00007  .000393   11.4149
liv_pe~d |   .0000276      .00005    0.59   0.557  -.000064   .00012   3.50291
r_evic~n |  -.0000824      .00007   -1.18   0.238  -.000219  .000054   3.06926
 mfi_mem*|   -.000305      .00025   -1.22   0.224  -.000796  .000187   .317799
   ctype*|     .00057      .00043    1.33   0.183   -.00027   .00141   .596764
city_cat |   -.000193      .00016   -1.23   0.219  -.000501  .000115   1.83754
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

```
Marginal effects after ologit
      y  = Pr(ftrust_nei==7) (predict, outcome (7))
         =  .02394123
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0002501      .00026    0.94   0.345  -.000269  .000769   5.82006
freq_nei |  -.0062189      .00222   -2.81   0.005  -.010562 -.001876   1.16764
logincom |   .0008825       .0023    0.38   0.701  -.003627  .005392   9.34467
logasset |    .003165       .0008    3.98   0.000   .001606  .004724   11.4149
liv_pe~d |   .0005413      .00084    0.64   0.521  -.001111  .002193   3.50291
r_evic~n |  -.0016172       .0008   -2.03   0.043  -.003181 -.000053   3.06926
 mfi_mem*|  -.0059994       .0027   -2.22   0.026  -.011289  -.00071   .317799
   ctype*|   .0112013      .00337    3.32   0.001   .004595  .017807   .596764
city_cat |  -.0037888      .00164   -2.31   0.021  -.007008 -.000569   1.83754
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (8))

Marginal effects after ologit
      y  = Pr(ftrust_nei==8) (predict, outcome (8))
         =  .18930151
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0015447      .00162    0.95   0.341  -.001633  .004722   5.82006
freq_nei |  -.0384034      .01254   -3.06   0.002   -.06298 -.013827   1.16764
logincom |   .0054495      .01419    0.38   0.701  -.022353  .033252   9.34467
logasset |   .0195447      .00412    4.75   0.000   .011478  .027612   11.4149
liv_pe~d |   .0033425      .00519    0.64   0.519  -.006822  .013507   3.50291
r_evic~n |  -.0099865      .00473   -2.11   0.035  -.019261 -.000712   3.06926
 mfi_mem*|   -.037729      .01637   -2.30   0.021  -.069818  -.00564   .317799
   ctype*|   .0699173      .01879    3.72   0.000   .033088  .106746   .596764
city_cat |  -.0233967       .0096   -2.44   0.015  -.042213 -.004581   1.83754
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (9))

Marginal effects after ologit
      y  = Pr(ftrust_nei==9) (predict, outcome (9))
         =   .6119841
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |  -.0002682       .0003   -0.90   0.370  -.000855  .000318   5.82006
freq_nei |   .0066688      .00337    1.98   0.048   .000058   .01328   1.16764
logincom |  -.0009463      .00249   -0.38   0.704  -.005829  .003936   9.34467
logasset |   -.003394      .00149   -2.28   0.022  -.006305 -.000483   11.4149
liv_pe~d |  -.0005804      .00093   -0.62   0.532  -.002401   .00124   3.50291
r_evic~n |   .0017342      .00107    1.63   0.104  -.000357  .003826   3.06926
 mfi_mem*|   .0042035      .00269    1.56   0.118  -.001071  .009478   .317799
   ctype*|  -.0078146      .00485   -1.61   0.107  -.017315  .001686   .596764
city_cat |   .0040629       .0023    1.77   0.077  -.000443  .008569   1.83754
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (10))

Marginal effects after ologit
      y  = Pr(ftrust_nei==10) (predict, outcome (10))
         =  .17358448
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |  -.0015393      .00162   -0.95   0.341  -.004706  .001628   5.82006
freq_nei |   .0382702      .01246    3.07   0.002   .013857  .062683   1.16764
logincom |  -.0054306      .01414   -0.38   0.701  -.033135  .022274   9.34467
```

```
r_evic~n |   .0099518       .0047    2.12   0.034   .000746  .019158   3.06926
 mfi_mem*|   .0398299      .01829    2.18   0.029   .003977  .075683   .317799
   ctype*|   -.073874      .02095   -3.53   0.000  -.114927 -.032821   .596764
city_cat |   .0233155      .00953    2.45   0.014   .004636  .041995   1.83754
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1


. *Ordered probit model coefficient
. oprobit $ylist $xlist

Iteration 0:   log likelihood = -1608.4324
Iteration 1:   log likelihood = -1572.5962
Iteration 2:   log likelihood =  -1572.551
Iteration 3:   log likelihood =  -1572.551

Ordered probit regression                         Number of obs   =       1545
                                                  LR chi2(9)      =      71.76
                                                  Prob > chi2     =     0.0000
Log likelihood =  -1572.551                       Pseudo R2       =     0.0223

------------------------------------------------------------------------------
  ftrust_nei |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      nneigh |  -.0061207   .0063472    -0.96   0.335     -.018561    .0063196
    freq_nei |   .1525021   .0506756     3.01   0.003     .0531797    .2518244
    logincom |  -.0232844    .055345    -0.42   0.674    -.1317586    .0851897
    logasset |  -.0792771   .0158735    -4.99   0.000    -.1103886   -.0481657
  liv_period |  -.0106006   .0201906    -0.53   0.600    -.0501733    .0289722
  r_eviction |   .0392027   .0183691     2.13   0.033        .0032    .0752054
     mfi_mem |    .162682   .0670507     2.43   0.015      .031265    .2940989
       ctype |  -.2759599   .0763304    -3.62   0.000    -.4255647    -.126355
    city_cat |   .0899355   .0379834     2.37   0.018     .0154895    .1643815
-------------+----------------------------------------------------------------
       /cut1 |  -3.940366   .5849356                     -5.086819   -2.793913
       /cut2 |  -2.828782   .5443251                     -3.895639   -1.761924
       /cut3 |  -1.635619   .5402051                     -2.694402   -.5768365
       /cut4 |   .0852477    .539084                     -.9713375    1.141833
------------------------------------------------------------------------------

.
. *Ordered probit model marginal effects
. mfx, predict (outcome (6))

Marginal effects after oprobit
      y  = Pr(ftrust_nei==6) (predict, outcome (6))
         =  .00098157
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0000203      .00003    0.81   0.421  -.000029   .00007   5.82006
freq_nei |  -.0005048      .00038   -1.33   0.184  -.001249   .00024   1.16764
logincom |   .0000771      .00019    0.41   0.685  -.000296   .00045   9.34467
logasset |   .0002624      .00018    1.44   0.151  -.000096  .000621   11.4149
liv_pe~d |   .0000351      .00007    0.49   0.621  -.000104  .000174   3.50291
r_evic~n |  -.0001298      .00011   -1.22   0.222  -.000338  .000079   3.06926
 mfi_mem*|  -.0004958      .00038   -1.29   0.198   -.00125  .000259   .317799
   ctype*|   .0008641      .00062    1.39   0.165  -.000356  .002084   .596764
city_cat |  -.0002977      .00024   -1.26   0.208  -.000761  .000166   1.83754
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (7))

Marginal effects after oprobit
      y  = Pr(ftrust_nei==7) (predict, outcome (7))
         =  .02263698
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
```

```
freq_nei |  -.0079928      .00285   -2.80   0.005  -.013579 -.002406   1.16764
logincom |   .0012204      .00291    0.42   0.674  -.004474  .006914   9.34467
logasset |    .004155      .00098    4.22   0.000   .002227  .006083   11.4149
liv_pe~d |   .0005556      .00106    0.52   0.600  -.001522  .002633   3.50291
r_evic~n |  -.0020546        .001   -2.06   0.039  -.004005 -.000104   3.06926
 mfi_mem*|  -.0080762      .00332   -2.43   0.015  -.014591 -.001561   .317799
   ctype*|   .0138545      .00409    3.38   0.001    .00583  .021879   .596764
city_cat |  -.0047136      .00208   -2.27   0.023  -.008788 -.000639   1.83754
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (8))

Marginal effects after oprobit
      y  = Pr(ftrust_nei==8) (predict, outcome (8))
         =   .1908518
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0014448       .0015    0.96   0.335  -.001493  .004383   5.82006
freq_nei |  -.0359982      .01203   -2.99   0.003  -.059582 -.012415   1.16764
logincom |   .0054963      .01307    0.42   0.674  -.020112  .031104   9.34467
logasset |   .0187134      .00383    4.89   0.000   .011205  .026222   11.4149
liv_pe~d |   .0025023      .00477    0.52   0.600  -.006842  .011846   3.50291
r_evic~n |  -.0092538      .00435   -2.13   0.034  -.017786 -.000722   3.06926
 mfi_mem*|  -.0377569      .01535   -2.46   0.014  -.067843 -.007671   .317799
   ctype*|   .0640047      .01755    3.65   0.000   .029617  .098393   .596764
city_cat |  -.0212293        .009   -2.36   0.018  -.038875 -.003583   1.83754
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (9))

Marginal effects after oprobit
      y  = Pr(ftrust_nei==9) (predict, outcome (9))
         =  .60930814
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |  -.0002011      .00022   -0.90   0.371  -.000641  .000239   5.82006
freq_nei |   .0050109      .00266    1.88   0.060  -.000209   .01023   1.16764
logincom |  -.0007651      .00185   -0.41   0.679  -.004383  .002853   9.34467
logasset |  -.0026049      .00121   -2.16   0.031  -.004968 -.000242   11.4149
liv_pe~d |  -.0003483      .00068   -0.51   0.608  -.001679  .000982   3.50291
r_evic~n |   .0012881      .00081    1.60   0.111  -.000294   .00287   3.06926
 mfi_mem*|   .0030594      .00225    1.36   0.173  -.001343  .007462   .317799
   ctype*|  -.0055464       .0038   -1.46   0.144  -.012985  .001893   .596764
city_cat |   .0029551      .00175    1.69   0.092  -.000477  .006387   1.83754
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (10))

Marginal effects after oprobit
      y  = Pr(ftrust_nei==10) (predict, outcome (10))
         =  .17622151
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |  -.0015847      .00164   -0.96   0.335  -.004806  .001637   5.82006
freq_nei |   .0394849      .01315    3.00   0.003   .013713  .065257   1.16764
logincom |  -.0060287      .01433   -0.42   0.674  -.034114  .022057   9.34467
logasset |   -.020526      .00413   -4.97   0.000  -.028619 -.012433   11.4149
liv_pe~d |  -.0027446      .00523   -0.52   0.600  -.012991  .007502   3.50291
r_evic~n |   .0101501      .00476    2.13   0.033   .000822  .019479   3.06926
 mfi_mem*|   .0432696      .01832    2.36   0.018   .007369   .07917   .317799
   ctype*|   -.073177      .02075   -3.53   0.000  -.113838 -.032516   .596764
city_cat |   .0232856      .00984    2.37   0.018    .00399  .042581   1.83754
------------------------------------------------------------------------------
```

D.6.2. **trust in neighbours 'loking after house', (s4_2)

```
.
. *dependent variable
. global ylist htrust_nei

. *explanatory variables
. global xlist nneigh freq_nei logincom logasset liv_period r_eviction mfi_mem ctype city_cat

. *Ordered logit model coefficient
. ologit $ylist $xlist

Iteration 0:   log likelihood = -889.42202
Iteration 1:   log likelihood = -863.79442
Iteration 2:   log likelihood = -862.96393
Iteration 3:   log likelihood = -862.96275
Iteration 4:   log likelihood = -862.96275

Ordered logistic regression                     Number of obs   =       1571
                                                LR chi2(9)      =      52.92
                                                Prob > chi2     =     0.0000
Log likelihood = -862.96275                     Pseudo R2       =     0.0297

------------------------------------------------------------------------------
  htrust_nei |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      nneigh |  -.0106387   .0148244    -0.72   0.473     -.039694    .0184165
    freq_nei |  -.0350202   .1093992    -0.32   0.749    -.2494387    .1793984
    logincom |  -.1703653   .1388275    -1.23   0.220    -.4424623    .1017316
    logasset |   .0118146    .037344     0.32   0.752    -.0613784    .0850076
  liv_period |   .0259855   .0489825     0.53   0.596    -.0700185    .1219895
  r_eviction |   .2460949   .0438775     5.61   0.000     .1600965    .3320933
     mfi_mem |   -.212933   .1563432    -1.36   0.173      -.51936     .093494
       ctype |  -1.032994   .1921953    -5.37   0.000     -1.40969   -.6562977
    city_cat |  -.2269679   .0923288    -2.46   0.014    -.4079291   -.0460067
-------------+----------------------------------------------------------------
       /cut1 |  -9.286085   1.681628                     -12.58201   -5.990155
       /cut2 |  -6.975383   1.388346                      -9.69649   -4.254276
       /cut3 |  -4.962117   1.356464                     -7.620738   -2.303497
       /cut4 |    -3.4966   1.351789                     -6.146057   -.8471426
------------------------------------------------------------------------------

. *Ordered logit marginal effects
. mfx, predict (outcome (6))

Marginal effects after ologit
      y  = Pr(htrust_nei==6) (predict, outcome (6))
         =  .00055903
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   5.94e-06      .00001    0.58   0.559  -.000014  .000026    5.7352
freq_nei |   .0000196      .00006    0.30   0.760  -.000106  .000145   1.16168
logincom |   .0000952      .00012    0.78   0.437  -.000145  .000335   9.35034
logasset |  -6.60e-06      .00002   -0.30   0.763  -.000049  .000036   11.4067
liv_pe~d |  -.0000145      .00003   -0.47   0.639  -.000075  .000046   3.53724
r_evic~n |  -.0001375      .00014   -0.99   0.323   -.00041  .000135   3.06747
 mfi_mem*|   .0001242      .00016    0.80   0.426  -.000182   .00043   .307447
   ctype*|   .0005492      .00056    0.99   0.323   -.00054  .001639   .590707
city_cat |   .0001268      .00014    0.93   0.352   -.00014  .000394   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (7))

Marginal effects after ologit
```

```
 y  = Pr(htrust_nei==7) (predict, outcome (7))
         =  .00504834
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0000534      .00008    0.70   0.484  -.000096  .000203    5.7352
freq_nei |   .0001757      .00055    0.32   0.750  -.000906  .001257   1.16168
logincom |   .0008548      .00075    1.14   0.253  -.000612  .002322   9.35034
logasset |  -.0000593      .00019   -0.31   0.753  -.000428   .00031   11.4067
liv_pe~d |  -.0001304      .00025   -0.52   0.601  -.000619  .000358   3.53724
r_evic~n |  -.0012347      .00045   -2.73   0.006   -.00212 -.000349   3.06747
 mfi_mem*|   .0011145      .00093    1.20   0.229    -.0007  .002928   .307447
   ctype*|   .0049297      .00182    2.71   0.007   .001369  .008491   .590707
city_cat |   .0011387      .00059    1.94   0.053  -.000014  .002292   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (8))

Marginal effects after ologit
      y  = Pr(htrust_nei==8) (predict, outcome (8))
         =  .03490527
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0003542      .00049    0.72   0.474  -.000615  .001324    5.7352
freq_nei |    .001166      .00364    0.32   0.749  -.005976  .008308   1.16168
logincom |   .0056724      .00465    1.22   0.223  -.003447  .014792   9.35034
logasset |  -.0003934      .00124   -0.32   0.752  -.002831  .002045   11.4067
liv_pe~d |  -.0008652      .00163   -0.53   0.596  -.004063  .002333   3.53724
r_evic~n |  -.0081938      .00165   -4.96   0.000  -.011429 -.004959   3.06747
 mfi_mem*|   .0073679      .00567    1.30   0.194  -.003744   .01848   .307447
   ctype*|   .0326386      .00665    4.90   0.000   .019596  .045681   .590707
city_cat |    .007557      .00314    2.41   0.016    .00141  .013704   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (9))

Marginal effects after ologit
      y  = Pr(htrust_nei==9) (predict, outcome (9))
         =   .1140483
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0009766      .00136    0.72   0.473  -.001692  .003645    5.7352
freq_nei |   .0032149      .01004    0.32   0.749  -.016469  .022899   1.16168
logincom |   .0156396      .01275    1.23   0.220  -.009354  .040633   9.35034
logasset |  -.0010846      .00343   -0.32   0.752  -.007804  .005635   11.4067
liv_pe~d |  -.0023855      .00449   -0.53   0.596  -.011195  .006424   3.53724
r_evic~n |  -.0225916       .0041   -5.51   0.000  -.030623  -.01456   3.06747
 mfi_mem*|   .0200213      .01507    1.33   0.184  -.009508  .049551   .307447
   ctype*|   .0896919      .01597    5.62   0.000   .058391  .120993   .590707
city_cat |   .0208358      .00846    2.46   0.014   .004261  .037411   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (10))

Marginal effects after ologit
      y  = Pr(htrust_nei==10) (predict, outcome (10))
         =  .84543907
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |  -.0013902      .00194   -0.72   0.473  -.005186  .002406    5.7352
freq_nei |  -.0045761      .01429   -0.32   0.749  -.032591  .023439   1.16168
logincom |   -.022262      .01812   -1.23   0.219  -.057768  .013244   9.35034
logasset |   .0015438      .00488    0.32   0.752   -.00802  .011107   11.4067
mfi_mem*|  -.0286279       .0216   -1.33   0.185  -.070962  .013706   .307447
   ctype*|  -.1278095      .02206   -5.79   0.000  -.171048 -.084571   .590707
```

```
city_cat |  -.0296583      .01194   -2.48   0.013  -.053062 -.006254   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. *Ordered probit model coefficient
. oprobit $ylist $xlist

Iteration 0:   log likelihood = -889.42202
Iteration 1:   log likelihood = -863.08001
Iteration 2:   log likelihood =  -862.9133
Iteration 3:   log likelihood = -862.91328

Ordered probit regression                         Number of obs   =       1571
                                                  LR chi2(9)      =      53.02
                                                  Prob > chi2     =     0.0000
Log likelihood = -862.91328                       Pseudo R2       =     0.0298

------------------------------------------------------------------------------
  htrust_nei |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      nneigh |  -.0062914   .0082818    -0.76   0.447    -.0225234    .0099406
    freq_nei |  -.0092442   .0624623    -0.15   0.882    -.1316679    .1131796
    logincom |  -.1049221   .0753152    -1.39   0.164    -.2525373     .042693
    logasset |   .0041281    .020477     0.20   0.840    -.0360061    .0442624
  liv_period |   .0046183   .0265926     0.17   0.862    -.0475022    .0567389
  r_eviction |   .1374083   .0234897     5.85   0.000     .0913694    .1834472
     mfi_mem |  -.1225255   .0854533    -1.43   0.152    -.2900109    .0449598
       ctype |  -.5438952   .1013695    -5.37   0.000    -.7425758   -.3452147
    city_cat |  -.1098653   .0506931    -2.17   0.030    -.2092219   -.0105088
-------------+----------------------------------------------------------------
       /cut1 |  -4.446628   .7915014                     -5.997942   -2.895314
       /cut2 |  -3.680493   .7407749                     -5.132385   -2.228601
       /cut3 |  -2.855611   .7322668                     -4.290827   -1.420394
       /cut4 |  -2.106365   .7303554                     -3.537835   -.6748947
------------------------------------------------------------------------------

. *Ordered probit model marginal effects
. mfx, predict (outcome (6))

Marginal effects after oprobit
      y  = Pr(htrust_nei==6) (predict, outcome (6))
         =  .00040854
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]       X
---------+--------------------------------------------------------------------
  nneigh |   9.27e-06      .00002    0.61   0.543  -.000021  .000039    5.7352
freq_nei |   .0000136      .00009    0.15   0.884  -.000169  .000196   1.16168
logincom |   .0001546      .00019    0.81   0.419   -.00022  .000529   9.35034
logasset |  -6.08e-06      .00003   -0.20   0.844  -.000067  .000054   11.4067
liv_pe~d |  -6.81e-06      .00004   -0.17   0.864  -.000085  .000071   3.53724
r_evic~n |  -.0002025      .00021   -0.98   0.325  -.000606  .000201   3.06747
 mfi_mem*|   .0001966      .00025    0.80   0.425  -.000286  .000679   .307447
   ctype*|   .0007689      .00078    0.99   0.324  -.000759  .002297   .590707
city_cat |   .0001619      .00018    0.90   0.366  -.000189  .000513   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (7))

Marginal effects after oprobit
      y  = Pr(htrust_nei==7) (predict, outcome (7))
         =   .0045199
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]       X
---------+--------------------------------------------------------------------
  nneigh |   .0000805      .00011    0.74   0.459  -.000133  .000294    5.7352
freq_nei |   .0001183       .0008    0.15   0.882  -.001451  .001687   1.16168
logincom |   .0013432      .00104    1.29   0.198    -.0007  .003386   9.35034
logasset |  -.0000528      .00026   -0.20   0.841  -.000568  .000462   11.4067
mfi_mem*|   .0016682      .00133    1.25   0.210  -.000939  .004275   .307447
   ctype*|   .0065596      .00233    2.82   0.005   .001998  .011121   .590707
```

```
city_cat |   .0014064      .00078    1.80   0.072  -.000125  .002937   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (8))

Marginal effects after oprobit
      y  = Pr(htrust_nei==8) (predict, outcome (8))
         =  .03462193
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0004474      .00059    0.76   0.449  -.000711  .001605    5.7352
freq_nei |   .0006574      .00444    0.15   0.882  -.008049  .009364   1.16168
logincom |    .007461       .0054    1.38   0.167  -.003122  .018044   9.35034
logasset |  -.0002936      .00146   -0.20   0.840  -.003148   .00256   11.4067
liv_pe~d |  -.0003284      .00189   -0.17   0.862  -.004034  .003377   3.53724
r_evic~n |  -.0097711       .0019   -5.13   0.000  -.013503 -.006039   3.06747
 mfi_mem*|   .0090502      .00661    1.37   0.171  -.003911  .022011   .307447
   ctype*|   .0363795      .00731    4.97   0.000   .022047  .050712   .590707
city_cat |   .0078125      .00366    2.13   0.033   .000633  .014992   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (9))

Marginal effects after oprobit
      y  = Pr(htrust_nei==9) (predict, outcome (9))
         =  .11749343
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |    .000975      .00128    0.76   0.448  -.001543  .003493    5.7352
freq_nei |   .0014326      .00968    0.15   0.882  -.017539  .020404   1.16168
logincom |   .0162596      .01171    1.39   0.165  -.006683  .039202   9.35034
logasset |  -.0006397      .00317   -0.20   0.840  -.006859   .00558   11.4067
liv_pe~d |  -.0007157      .00412   -0.17   0.862  -.008792   .00736   3.53724
r_evic~n |   -.021294      .00385   -5.53   0.000  -.028845 -.013743   3.06747
 mfi_mem*|   .0192333      .01362    1.41   0.158  -.007459  .045926   .307447
   ctype*|   .0806968      .01485    5.43   0.000   .051594    .1098   .590707
city_cat |   .0170257      .00789    2.16   0.031    .00156  .032491   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (10))

Marginal effects after oprobit
      y  = Pr(htrust_nei==10) (predict, outcome (10))
         =  .84295621
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |  -.0015122      .00199   -0.76   0.447  -.005414   .00239    5.7352
freq_nei |  -.0022219      .01501   -0.15   0.882  -.031647  .027203   1.16168
logincom |  -.0252184      .01809   -1.39   0.163  -.060669  .010232   9.35034
logasset |   .0009922      .00492    0.20   0.840  -.008654  .010638   11.4067
liv_pe~d |     .00111      .00639    0.17   0.862  -.011416  .013636   3.53724
r_evic~n |   .0330266      .00561    5.88   0.000   .022022  .044031   3.06747
 mfi_mem*|  -.0301483      .02151   -1.40   0.161  -.072301  .012005   .307447
   ctype*|  -.1244048      .02186   -5.69   0.000  -.167253 -.081557   .590707
city_cat |  -.0264066      .01214   -2.18   0.030    -.0502 -.002613   1.80013
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1


. global ylist emtrust_nei

. *explanatory variables
. global xlist nneigh freq_nei logincom logasset liv_period r_eviction mfi_mem ctype
city_cat
```

```
. *Ordered logit model
. ologit $ylist $xlist

Iteration 0:   log likelihood = -1811.4795
Iteration 1:   log likelihood = -1794.3563
Iteration 2:   log likelihood =  -1794.302
Iteration 3:   log likelihood =  -1794.302

Ordered logistic regression                       Number of obs   =       1572
                                                  LR chi2(9)      =      34.35
                                                  Prob > chi2     =     0.0001
Log likelihood =  -1794.302                       Pseudo R2       =     0.0095

------------------------------------------------------------------------------
 emtrust_nei |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      nneigh |  -.0179208    .010603    -1.69   0.091    -.0387023    .0028607
    freq_nei |   .2089185   .0848759     2.46   0.014     .0425648    .3752723
    logincom |   -.078817   .0950057    -0.83   0.407    -.2650247    .1073907
    logasset |  -.0751264   .0271546    -2.77   0.006    -.1283485   -.0219044
  liv_period |  -.0403558   .0346936    -1.16   0.245     -.108354    .0276425
  r_eviction |   .1007264   .0318521     3.16   0.002     .0382974    .1631554
     mfi_mem |   .0803452   .1131404     0.71   0.478     -.141406    .3020963
       ctype |  -.4749812   .1320144    -3.60   0.000    -.7337247   -.2162377
    city_cat |  -.0313177   .0621971    -0.50   0.615    -.1532217    .0905863
-------------+----------------------------------------------------------------
       /cut1 |  -8.998622   1.362124                     -11.66834   -6.328908
       /cut2 |  -7.898566   1.090239                     -10.03539   -5.761737
       /cut3 |  -7.610043   1.051306                     -9.670566    -5.54952
       /cut4 |  -7.386104   1.027236                     -9.399451   -5.372758
       /cut5 |  -6.689724   .9773251                     -8.605246   -4.774202
       /cut6 |  -4.714693   .9320075                     -6.541394   -2.887992
       /cut7 |  -2.924342   .9242046                      -4.73575   -1.112934
       /cut8 |  -.5324001   .9209592                     -2.337447    1.272647
------------------------------------------------------------------------------


. *Ordered logit marginal effects
. mfx, predict (outcome (6))

Marginal effects after ologit
      y  = Pr(emtrust_nei==6) (predict, outcome (6))
         =  .00305337
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0000542      .00004    1.35   0.175  -.000024  .000133   5.76781
freq_nei |  -.0006321      .00038   -1.66   0.096  -.001376  .000112   1.16858
logincom |   .0002385      .00031    0.78   0.436  -.000362  .000838   9.34728
logasset |   .0002273      .00013    1.75   0.080  -.000027  .000481   11.4055
liv_pe~d |   .0001221      .00012    1.04   0.301  -.000109  .000353    3.5229
r_evic~n |  -.0003047      .00017   -1.84   0.065  -.000629  .000019   3.08142
 mfi_mem*|  -.0002396      .00035   -0.69   0.493  -.000924  .000445   .316794
   ctype*|   .0013892      .00072    1.93   0.053   -.00002  .002799   .591603
city_cat |   .0000947      .00019    0.49   0.623  -.000283  .000473    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (7))

Marginal effects after ologit
      y  = Pr(emtrust_nei==7) (predict, outcome (7))
         =  .03629055
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0006188      .00037    1.66   0.096   -.00011  .001348   5.76781
freq_nei |   -.007214      .00304   -2.37   0.018  -.013179 -.001249   1.16858
logincom |   .0027216       .0033    0.83   0.409  -.003737   .00918   9.34728
r_evic~n |  -.0034781      .00116   -2.99   0.003  -.005761 -.001195   3.08142
 mfi_mem*|  -.0027382      .00382   -0.72   0.473  -.010223  .004747   .316794
```

```
   ctype*|   .0158767      .00465    3.42   0.001   .006767  .024986   .591603
city_cat |   .0010814      .00215    0.50   0.615  -.003134  .005297    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (8))

Marginal effects after ologit
      y  = Pr(emtrust_nei==8) (predict, outcome (8))
         =  .16725603
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0022419      .00133    1.69   0.091  -.000359  .004842   5.76781
freq_nei |  -.0261356      .01066   -2.45   0.014  -.047023 -.005248   1.16858
logincom |     .00986      .01189    0.83   0.407  -.013451  .033171   9.34728
logasset |   .0093983      .00343    2.74   0.006   .002683  .016113   11.4055
liv_pe~d |   .0050485      .00435    1.16   0.246  -.003474  .013571    3.5229
r_evic~n |  -.0126008      .00402   -3.13   0.002  -.020488 -.004714   3.08142
 mfi_mem*|  -.0099804      .01396   -0.72   0.475  -.037335  .017374   .316794
   ctype*|    .058074      .01595    3.64   0.000   .026813  .089335   .591603
city_cat |   .0039178      .00778    0.50   0.615  -.011331  .019167    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (9))

Marginal effects after ologit
      y  = Pr(emtrust_nei==9) (predict, outcome (9))
         =   .5339772
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0004471      .00032    1.41   0.158  -.000173  .001067   5.76781
freq_nei |  -.0052118      .00288   -1.81   0.070   -.01085  .000426   1.16858
logincom |   .0019662      .00248    0.79   0.427  -.002885  .006818   9.34728
logasset |   .0018741      .00096    1.96   0.050  -2.3e-06  .003751   11.4055
liv_pe~d |   .0010067      .00094    1.08   0.282  -.000827  .002841    3.5229
r_evic~n |  -.0025128      .00121   -2.07   0.038   -.00489 -.000135   3.08142
 mfi_mem*|   -.002227      .00353   -0.63   0.528  -.009147  .004692   .316794
   ctype*|   .0155757       .0068    2.29   0.022   .002251    .0289   .591603
city_cat |   .0007813      .00158    0.49   0.622  -.002321  .003884    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (10))

Marginal effects after ologit
      y  = Pr(emtrust_nei==10) (predict, outcome (10))
         =   .2563705
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |  -.0034165      .00202   -1.69   0.091  -.007383   .00055   5.76781
freq_nei |   .0398292       .0162    2.46   0.014   .008086  .071572   1.16858
logincom |   -.015026      .01811   -0.83   0.407  -.050524  .020471   9.34728
logasset |  -.0143225      .00517   -2.77   0.006  -.024455  -.00419   11.4055
liv_pe~d |  -.0076936      .00661   -1.16   0.244   -.02065  .005263    3.5229
r_evic~n |   .0192029      .00607    3.17   0.002   .007316   .03109   3.08142
 mfi_mem*|   .0154264      .02188    0.71   0.481  -.027452  .058305   .316794
   ctype*|  -.0923126      .02607   -3.54   0.000  -.143405  -.04122   .591603
city_cat |  -.0059705      .01186   -0.50   0.615  -.029215  .017274    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. *Ordered probit model coefficient
. oprobit $ylist $xlist

Iteration 0:   log likelihood = -1811.4795
Iteration 3:   log likelihood =  -1794.177
```

```
Ordered probit regression                         Number of obs   =       1572
                                                  LR chi2(9)      =      34.61
                                                  Prob > chi2     =     0.0001
Log likelihood =  -1794.177                       Pseudo R2       =     0.0096

------------------------------------------------------------------------------
 emtrust_nei |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      nneigh |  -.0090493   .0061945    -1.46   0.144    -.0211903    .0030917
    freq_nei |    .122006   .0497299     2.45   0.014     .0245372    .2194748
    logincom |  -.0564431   .0548179    -1.03   0.303    -.1638842    .0509981
    logasset |  -.0432045   .0154179    -2.80   0.005     -.073423    -.012986
  liv_period |  -.0192661   .0197404    -0.98   0.329    -.0579566    .0194245
  r_eviction |   .0561432   .0178146     3.15   0.002     .0212273    .0910591
     mfi_mem |   .0539908   .0649834     0.83   0.406    -.0733743     .181356
       ctype |  -.2725281   .0738574    -3.69   0.000     -.417286   -.1277702
    city_cat |  -.0153889   .0366124    -0.42   0.674    -.0871478    .0563701
-------------+----------------------------------------------------------------
       /cut1 |  -4.256216   .6090038                     -5.449842   -3.062591
       /cut2 |  -3.927406   .5655245                     -5.035814   -2.818999
       /cut3 |  -3.833857   .5587927                     -4.929071   -2.738643
       /cut4 |  -3.759684    .554576                     -4.846632   -2.672735
       /cut5 |  -3.523155   .5460035                     -4.593302   -2.453008
       /cut6 |   -2.73173   .5360291                     -3.782328   -1.681132
       /cut7 |  -1.805072   .5328913                      -2.84952   -.7606244
       /cut8 |  -.3472949   .5317234                     -1.389454    .6948639
------------------------------------------------------------------------------

. *Ordered probit model marginal effects
. mfx, predict (outcome (6))

Marginal effects after oprobit
      y  = Pr(emtrust_nei==6) (predict, outcome (6))
         =  .00290005
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0000691      .00006    1.23   0.219  -.000041  .000179   5.76781
freq_nei |  -.0009313      .00055   -1.69   0.092  -.002014  .000152   1.16858
logincom |   .0004308      .00046    0.94   0.346  -.000465  .001327   9.34728
logasset |   .0003298      .00018    1.81   0.071  -.000028  .000688   11.4055
liv_pe~d |   .0001471      .00016    0.90   0.367  -.000173  .000467    3.5229
r_evic~n |  -.0004286      .00023   -1.88   0.061  -.000876  .000019   3.08142
 mfi_mem*|  -.0004032       .0005   -0.80   0.425  -.001393  .000586   .316794
   ctype*|   .0019905        .001    2.00   0.046   .000037  .003944   .591603
city_cat |   .0001175      .00028    0.41   0.679   -.00044  .000675    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (7))

Marginal effects after oprobit
      y  = Pr(emtrust_nei==7) (predict, outcome (7))
         =  .03563355
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0006533      .00045    1.44   0.149  -.000234  .001541   5.76781
freq_nei |  -.0088086      .00371   -2.37   0.018  -.016082 -.001535   1.16858
logincom |   .0040751      .00398    1.02   0.306   -.00373   .01188   9.34728
logasset |   .0031193      .00115    2.70   0.007   .000858  .005381   11.4055
liv_pe~d |    .001391      .00143    0.97   0.331  -.001413  .004195    3.5229
r_evic~n |  -.0040535      .00135   -3.00   0.003  -.006698 -.001409   3.08142
 mfi_mem*|  -.0038389      .00457   -0.84   0.401  -.012793  .005115   .316794
   ctype*|   .0189981      .00535    3.55   0.000   .008514  .029482   .591603
city_cat |   .0011111      .00265    0.42   0.675  -.004076  .006299    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

```
Marginal effects after oprobit
      y  = Pr(emtrust_nei==8) (predict, outcome (8))
         =  .16814437
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0018028      .00123    1.46   0.144  -.000618  .004223   5.76781
freq_nei |   -.024306      .00996   -2.44   0.015  -.043835 -.004777   1.16858
logincom |   .0112446      .01094    1.03   0.304  -.010193  .032682   9.34728
logasset |   .0086072      .00311    2.77   0.006   .002513  .014702   11.4055
liv_pe~d |   .0038382      .00394    0.97   0.330  -.003882  .011558    3.5229
r_evic~n |  -.0111848       .0036   -3.11   0.002  -.018239  -.00413   3.08142
 mfi_mem*|  -.0107114      .01284   -0.83   0.404  -.035887  .014464   .316794
   ctype*|   .0535106      .01452    3.68   0.000   .025047  .081975   .591603
city_cat |   .0030658      .00729    0.42   0.674   -.01123  .017361    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (9))
Marginal effects after oprobit
      y  = Pr(emtrust_nei==9) (predict, outcome (9))
         =  .53253663
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |   .0003184      .00025    1.29   0.197  -.000165  .000802   5.76781
freq_nei |  -.0042928      .00234   -1.84   0.066  -.008871  .000286   1.16858
logincom |    .001986      .00205    0.97   0.334   -.00204  .006012   9.34728
logasset |   .0015202      .00077    1.98   0.048   .000017  .003024   11.4055
liv_pe~d |   .0006779      .00074    0.92   0.357  -.000764   .00212    3.5229
r_evic~n |  -.0019754      .00094   -2.09   0.036  -.003825 -.000126   3.08142
 mfi_mem*|  -.0021351      .00293   -0.73   0.467  -.007882  .003612   .316794
   ctype*|   .0124956      .00535    2.34   0.019   .002014  .022977   .591603
city_cat |   .0005415       .0013    0.42   0.678  -.002013  .003096    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

. mfx, predict (outcome (10))

Marginal effects after oprobit
      y  = Pr(emtrust_nei==10) (predict, outcome (10))
         =  .25791835
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
  nneigh |  -.0029231        .002   -1.46   0.144  -.006845  .000999   5.76781
freq_nei |   .0394103      .01607    2.45   0.014   .007904  .070916   1.16858
logincom |  -.0182322      .01771   -1.03   0.303   -.05294  .016476   9.34728
logasset |  -.0139559      .00498   -2.80   0.005  -.023721 -.004191   11.4055
liv_pe~d |  -.0062233      .00638   -0.98   0.329  -.018721  .006274    3.5229
r_evic~n |   .0181353      .00576    3.15   0.002   .006851  .029419   3.08142
 mfi_mem*|   .0175504      .02125    0.83   0.409  -.024108  .059209   .316794
   ctype*|  -.0892751      .02449   -3.64   0.000  -.137284 -.041266   .591603
city_cat |  -.0049709      .01183   -0.42   0.674  -.028151  .018209    1.8257
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

Appendix D: Chapter 7

Table D.1: Degree of *financial cooperation* received from the bonding networks

Dependent variable: 'Degree' of financial cooperation [OLS estimation]

Network		Standardised *Beta*-coefficient						Obs.^	*Adj*-R^2	RMSE
		Degree of trust	Fin. Coop. received	Number of networks	Freq. of contact	*Log*-income	Living period			
Relative	*All*	08**	.04	.01	.19***	.22***	.15***	523	0.97	1.15
	Poor	.08**	.05	.02	.28***	.14***	.14***	339	0.96	1.24
	Comparator	.18***	.05	-.08	.00	.28***	.13	184	0.98	0.87
Friend	*All*	.01	.10	-.06	.16*	.28***	-.21**	106	0.97	1.04
	Poor	-.30***	.30***	.00	.01	.38***	-.12	52	0.97	1.07
	Comparator	.31***	.10	-.08	.19	.14***	-.37***	53	0.98	0.88
Neighbour	*All*	.03	.06	.26***	-.02	.22***	.08*	458	0.96	1.20
	Poor	.03	.08	.28***	.15***	.15***	.13**	294	0.95	1.27
	Comparator	.11*	.14*	.24***	-.37***	.29***	-.04	162	0.98	0.91
Co-worker(all)		.06	.02	.17	.05	.30***	-.07	56	0.97	1.07

***99%levelofconfidence; **95% level of confidence and; * 90% level of confidence. ^ Responses for each explanatory variable are not equal. $Trust in financial lending.

Table D.2: *Non-financial cooperation* from the bonding networks

Dependent variable: Number of non-financial cooperation received in (past one year) [OLS estimation]

Network		Standardised *Beta*-coefficient						^Obs.	*Adj*-R^2	RMSE
		Degree of trust#	Fin. Coop. received	Number of networks	Freq. of contact	*Log*-income	Living period			
Relative	*All*	.01	-.03	-.11***	-.17***	.06***	.04	1680	0.40	0.82
	Poor	.07***	-.05	-.12***	-.20***	.00	-.00	1021	0.40	0.79
	Comparator	-.03	-.04	-.10***	-.12***	.08***	.10***	655	0.42	0.86
Friend	*All*	.04	.06*	.12***	-.08**	.06***	-.01	842	0.63	0.59
	Poor	.02	.03	-.01	-.06	.06***	-.03	445	0.59	0.61
	Comparator	.04	.09*	.24***	-.12**	.06**	.02	394	0.67	0.55
Neighbour	*All*	.01	-.03	-.05**	.01	.04***	.11***	1592	0.55	0.74
	Poor	.05*	-.05	-.11***	.05*	.02	.09***	957	0.54	0.72
	Comparator	-.02	.15***	.08*	-.04	.06***	.14***	631	0.58	0.73
Co-worker	*All*	.05	.12***	.07*	-.14***	.02	.14***	486	0.55	0.76
	Poor	-.06	.07	-.06	-.16***	.08***	.12*	257	0.57	0.71
	Comparator	.17***	.13**	.21***	-.15**	-.05*	.19***	228	.56	0.77

***99%levelofconfidence; **95% level of confidence and; * 90% level of confidence. ^ Responses for each explanatory variable are not equal. #Trust in financial lending. Figure in the parenthesis (.) shows the 'standard coefficient' as the regression failed to estimate the *standardisedβ* .

Table D.3: Expected cooperation in relation to the bridging/linking networks

Dependent variable: Number of *non-financial cooperation* received [in past one year] (OLS estimation)

	Standardised *Beta*-coefficient				Obs.^	*Adj*-R^2	RMS
	Number of networks	Freq. of contact	*Log*-income	Living period			
1.HH member in politics(all	-.01	.34***	.02	-.12	73	.47	.70
Poor	*.14*	*.28**	*.02*	*-.15*	*49*	*.49*	*.71*
Comparator	*-.33*	*.43***	*.03*	*-.08*	*24*	*.44*	*.68*
2.Relatives in politics(all	-.02	.23**	.02	-.00	97	.48	.69
Poor	*-.02*	*.18*	*.01*	*.07*	*67*	*.42*	*.76*
Comparator	*.04*	*.38***	*.05*	*-.20*	*30*	*.62*	*.51*
3.Professional(all sample)	.03	.15***	.00	.04	351	.35	.60
Poor	*-.06*	*.21****	*-.00*	*.00*	*191*	*.33*	*.54*
Comparator	*.13**	*.13**	*-.00*	*.09*	*158*	*.37*	*.65*
4.Businessman(all sample)	.04	-.01	.04***	.06	549	.41	.61
Poor	*-.02*	*.01*	*.04***	*.05*	*311*	*.40*	*.60*
Comparator	*.10*	*-.02*	*.04***	*.08*	*236*	*.43*	*.62*
5.Govt. organisation(all	.11	.26***	.01	-.00	199	.69	.48
Poor	*.13*	*.44****	*-.01*	*-.08*	*89*	*.74*	*.43*
Comparator	*.10*	*.10*	*.05*	*.05*	*110*	*.66*	*.511*
6.Voluntary organisation	.17**	.30***	-.00	-.02	161	.63	.53
Poor	*-.01*	*.37****	*.01*	*-.02*	*79*	*.72*	*.44*
Comparator	*.22***	*.30****	*-.01*	*-.03*	*81*	*.56*	*.61*
7.NGO	-.04	-.09	.06***	-.10	244	.15	.39
Poor	*-.04*	*-.08*	*.04***	*-.05*	*182*	*.10*	*.35*
Comparator	*.06*	*-.05*	*.06**	*-.15*	*62*	*.20*	*.48*
8.Local government	-.05	.05	.08***	.01	156	.61	.49
Poor	*-08*	*.06*	*.05***	*.03*	*98*	*.57*	*.50*
Comparator	*.01*	*.06*	*.08*	*.03*	*57*	*.65*	*.48*

***99%levelof confidence; **95% level of confidence and; * 90% level of confidence. ^ Responses for each explanatory variable are not equal.

D7.1.A Social capital is pre-determined [the case of financial cooperation from neighbours] (figure 7.1)

```
. gsem (zlogasset -> zr_incomeloss, ) (zlogasset -> zr_eviction, ) (zlogasset -> zcoop, )
(zlogasset -> ztrust, ) (zlogasset -> zliv_period, ) (zcoop -> zlev_fcoop_neihg, ) (zformal_edu1
-> zlev_fcoop_neihg, ) (zlogincom -> zlogasset, ) (zlogincom -> zlev_fcoop_neihg, ) (znneigh -
> zcoop, ) (znneigh -> zlev_fcoop_neihg, ) (zctype -> zcoop, ) (zctype -> ztrust, ) (zcity_cat
-> zcoop, ) (zcity_cat -> ztrust, ) (zlandown -> zcoop, ) (zlandown -> ztrust, ) (ztrust ->
zcoop, ) (zfreq_nei -> zlev_fcoop_neihg, ) (zfreq_nei -> ztrust, ) (zlognbexp -> zcoop, )
(zmfi_mem -> zcoop, ) (zmfi_mem -> ztrust, ), nocapslatent

Iteration 0:   log likelihood = -12020.199
Iteration 1:   log likelihood = -12020.199

Generalized structural equation model             Number of obs   =       1760
Log likelihood = -12020.199

------------------------------------------------------------------------------
                     |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------------------+--------------------------------------------------------------
zr_incomeloss <-     |
            zlogasset |  -.2221436    .023576    -9.42   0.000    -.2683518   -.1759354
                _cons |   .0047243   .0232617     0.20   0.839    -.0408678    .0503164
---------------------+--------------------------------------------------------------
zr_eviction <-       |
            zlogasset |  -.3321818   .0270131   -12.30   0.000    -.3851265   -.2792371
                _cons |   .0003053   .0226016     0.01   0.989     -.043993    .0446035
---------------------+--------------------------------------------------------------
zcoop <-             |
               ztrust |   .3329731   .0160391    20.76   0.000      .301537    .3644092
            zlogasset |   .0528268   .0378571     1.40   0.163    -.0213717    .1270253
              znneigh |   .7076501   .0177481    39.87   0.000     .6728645    .7424358
               zctype |    -.06621    .028396    -2.33   0.020     -.121865   -.0105549
            zcity_cat |   .0065787   .0233864     0.28   0.778    -.0392578    .0524151
             zlandown |  -.0304557    .020711    -1.47   0.141    -.0710485     .010137
            zlognbexp |   .1534281   .0263245     5.83   0.000     .1018331    .2050232
             zmfi_mem |   .0648948   .0187158     3.47   0.001     .0282126     .101577
                _cons |   .0634991    .021535     2.95   0.003     .0212914    .1057069
---------------------+--------------------------------------------------------------
ztrust <-            |
            zlogasset |   .1422072   .0292937     4.85   0.000     .0847925    .1996218
               zctype |   -.012241    .023382    -0.52   0.601    -.0580688    .0335869
            zcity_cat |   .0817926   .0186308     4.39   0.000     .0452769    .1183083
             zlandown |  -.0257298   .0188178    -1.37   0.172    -.0626121    .0111524
            zfreq_nei |   .6914849   .0166166    41.61   0.000     .6589169    .7240528
             zmfi_mem |   .0874361   .0183547     4.76   0.000     .0514616    .1234107
                _cons |  -.0158566   .0169893    -0.93   0.351     -.049155    .0174418
---------------------+--------------------------------------------------------------
zliv_period <-       |
            zlogasset |   .3861347   .0231612    16.67   0.000     .3407396    .4315299
                _cons |   .0034378   .0218518     0.16   0.875     -.039391    .0462667
---------------------+--------------------------------------------------------------
zlev_fcoop_neihg <-  |
                zcoop |   .0508739   .1061569     0.48   0.632    -.1571898    .2589376
          zformal_edu1 |   .1152493   .0637868     1.81   0.071    -.0097706    .2402692
            zlogincom |   .1708321     .07294     2.34   0.019     .0278724    .3137919
              znneigh |   .3279143   .1181458     2.78   0.006     .0963527    .5594758
            zfreq_nei |  -.0215087   .0451242    -0.48   0.634    -.1099505    .0669331
                _cons |  -.1764166    .065105    -2.71   0.007    -.3040201    -.048813
---------------------+--------------------------------------------------------------
zlogasset <-         |
            zlogincom |    .390177   .0220824    17.67   0.000     .3468964    .4334577
                _cons |  -.0009447   .0219661    -0.04   0.966    -.0439974    .0421081
---------------------+--------------------------------------------------------------
   var(e.zr_incomeloss)|   .9436712   .0322275                      .8825741    1.008998
     var(e.zr_eviction)|   .8924167   .0306472                      .8343262    .9545518
          var(e.zcoop)|   .2458477   .0121876                      .2230841     .270934
         var(e.ztrust)|   .4446301   .0161981                      .4139893    .4775386
    var(e.zliv_period)|   .8404056   .0292657                      .7849596     .899768
var(e.zlev_fcoop_neihg)|   .9048403   .0781663                      .7639049    1.071777
------------------------------------------------------------------------------
```

D7.1. B Social capital is co-determined [the case of fianancial cooperation from the neighbours] (figure 7.1)

```
. gsem (zlogasset -> zr_incomeloss, ) (zlogasset -> zr_eviction, ) (zlogasset -> zcoop, )
(zlogasset -> ztrust, ) (zlogasset -> zftrust_nei, ) (zlogasset -> zliv_period, ) (zcoop ->
zlev_fcoop_neihg, ) (zformal_edu1 -> zlev_fcoop_neihg, ) (zformal_edu1 -> zftrust_nei, )
(zlogincom -> zlogasset, ) (zlogincom -> zlev_fcoop_neihg, ) (znneigh -> zcoop, ) (znneigh ->
zlev_fcoop_neihg, ) (zctype -> zcoop, ) (zctype -> ztrust, ) (zcity_cat -> zcoop, ) (zcity_cat
-> ztrust, ) (zlandown -> zcoop, ) (zlandown -> ztrust, ) (ztrust -> zcoop, ) (ztrust ->
zftrust_nei, ) (zftrust_nei -> zlev_fcoop_neihg, ) (zage -> zftrust_nei, ) (zfreq_nei ->
zlev_fcoop_neihg, ) (zfreq_nei -> ztrust, ) (zfreq_nei -> zftrust_nei, ) (zlognbexp -> zcoop,
) (zmfi_mem -> zcoop, ) (zmfi_mem -> ztrust, ), nocapslatent

Iteration 0:   log likelihood = -14008.381
Iteration 1:   log likelihood = -14008.381

Generalized structural equation model             Number of obs   =       1760
Log likelihood = -14008.381
------------------------------------------------------------------------------
                     |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------------------+--------------------------------------------------------
zr_incomeloss <-     |
           zlogasset |  -.2221436   .0235763    -9.42   0.000    -.2683523   -.1759348
               _cons |   .0047243   .0232617     0.20   0.839    -.0408678    .0503164
---------------------+--------------------------------------------------------
zr_eviction <-       |
           zlogasset |  -.3321818   .0270777   -12.27   0.000    -.3852532   -.2791104
               _cons |   .0003053   .0226016     0.01   0.989     -.043993    .0446035
---------------------+--------------------------------------------------------
zcoop <-             |
              ztrust |   .3329731   .0160426    20.76   0.000     .3015301    .3644161
           zlogasset |   .0528268   .0380883     1.39   0.165    -.0218249    .1274784
             znneigh |   .7076501   .0177491    39.87   0.000     .6728625    .7424378
             zctype |    -.06621   .0284669    -2.33   0.020    -.1220041   -.0104158
           zcity_cat |   .0065787   .0233864     0.28   0.778    -.0392578    .0524152
            zlandown |  -.0304557   .0207188    -1.47   0.142    -.0710639    .0101524
           zlognbexp |   .1534281   .0263557     5.82   0.000      .101772    .2050843
            zmfi_mem |   .0648948   .0187172     3.47   0.001     .0282098    .1015798
               _cons |   .0634991   .0215488     2.95   0.003     .0212643     .105734
---------------------+--------------------------------------------------------
ztrust <-            |
           zlogasset |   .1422072   .0293147     4.85   0.000     .0847515    .1996628
              zctype |   -.012241   .0233877    -0.52   0.601    -.0580801    .0335982
           zcity_cat |   .0817926   .0186308     4.39   0.000     .0452769    .1183083
            zlandown |  -.0257298   .0188179    -1.37   0.172    -.0626122    .0111525
           zfreq_nei |   .6914849   .0166168    41.61   0.000     .6589166    .7240531
            zmfi_mem |   .0874361   .0183548     4.76   0.000     .0514614    .1234109
               _cons |  -.0158566   .0169893    -0.93   0.351     -.049155    .0174418
---------------------+--------------------------------------------------------
zftrust_nei <-       |
              ztrust |   .0174365   .0404828     0.43   0.667    -.0619083    .0967812
           zlogasset |   -.107014   .0293568    -3.65   0.000    -.1645523   -.0494756
         zformal_edu1 |   .0685204   .0287458     2.38   0.017     .0121796    .1248612
                zage |   .0619644   .0275896     2.25   0.025     .0078898     .116039
           zfreq_nei |   .0728704   .0376515     1.94   0.053    -.0009251     .146666
               _cons |   .0241268   .0257844     0.94   0.349    -.0264097    .0746634
---------------------+--------------------------------------------------------
zliv_period <-       |
           zlogasset |   .3861347   .0239408    16.13   0.000     .3392116    .4330578
               _cons |   .0034378   .0218518     0.16   0.875     -.039391    .0462667
---------------------+--------------------------------------------------------
zlev_fcoop_neihg <-  |
               zcoop |   .0721303   .1084943     0.66   0.506    -.1405146    .2847753
          zftrust_nei |   .0060433   .0650116     0.09   0.926    -.1213771    .1334638
         zformal_edu1 |   .0894291   .0648069     1.38   0.168    -.0375901    .2164482
            zlogincom |   .1715411   .0761718     2.25   0.024     .0222471    .3208352
              znneigh |   .3129563   .1218789     2.57   0.010      .074078    .5518346
           zfreq_nei |  -.0199377   .0451272    -0.44   0.659    -.1083854    .0685101
               _cons |  -.2249375   .0682631    -3.30   0.001    -.3587307   -.0911444
---------------------+--------------------------------------------------------
```

```
zlogasset <-           |
            zlogincom |    .390177   .0220824    17.67   0.000     .3468964    .4334577
                _cons |  -.0009447   .0219661    -0.04   0.966    -.0439974    .0421081
----------------------+------------------------------------------------------------------
   var(e.zr_incomeloss)|   .9436712   .0322308                      .8825681    1.009005
     var(e.zr_eviction)|   .8924167   .0306608                      .8343014    .9545803
           var(e.zcoop)|   .2458477   .0121883                      .2230829    .2709355
         var(e.ztrust)|   .4446301   .0161989                      .4139879    .4775403
     var(e.zftrust_nei)|   .9553361   .0356042                      .8880408    1.027731
     var(e.zliv_period)|   .8404056   .0292801                      .7849332    .8997982
var(e.zlev_fcoop_neihg)|   .8930707   .0794037                      .7502478    1.063082
       var(e.zlogasset)|   .8492035   .0286362                      .7948921    .9072257
------------------------------------------------------------------------------------------
```

D7.2. A Social capital predetermined (the case of financial cooperation from neighbours)

```
. *predetermined socil capital
.
. reg $y1list $y2list $x1list

      Source |       SS       df       MS              Number of obs =     515
-------------+------------------------------           F(  4,   510) =   17.69
       Model |  63.2503593     4  15.8125898           Prob > F      =  0.0000
    Residual |  455.993019   510   .89410396           R-squared     =  0.1218
-------------+------------------------------           Adj R-squared =  0.1149
       Total |  519.243379   514  1.01020113           Root MSE      =  .94557

------------------------------------------------------------------------------
zlev_fcoop~g |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       zcoop |    .120221   .0484989     2.48   0.014     .0249388    .2155033
zformal_edu1 |   .2926271   .0481607     6.08   0.000     .1980092    .3872449
 zliv_period |    .134359   .0479172     2.80   0.005     .0402195    .2284985
      zctype |  -.2264852    .047125    -4.81   0.000    -.3190682   -.1339022
       _cons |   .0394023   .0430406     0.92   0.360    -.0451564    .1239611
------------------------------------------------------------------------------

.   reg3   ($y1list=$y2list   $x1list)($y2list=$y3list   $x2list)($y3list=$y4list   $x3list)
($x4list=$y4list)

Three-stage least-squares regression
------------------------------------------------------------------------------
Equation          Obs  Parms        RMSE    "R-sq"       chi2        P
------------------------------------------------------------------------------
zlev_fcoop~g      265      4     .969886    0.0846      53.22   0.0000
zcoop             265      7    .4473627    0.7196     702.50   0.0000
ztrust            265      6     1.02076    0.0977      27.85   0.0001
zr_incomel~s      265      1    .9059682    0.0961      27.17   0.0000
zr_eviction       265      1    .8182752    0.2766     100.40   0.0000
zlogincom         265      1    .9092721    0.0951      28.30   0.0000
------------------------------------------------------------------------------

------------------------------------------------------------------------------
                 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----------------+------------------------------------------------------------------
zlev_fcoop_neihg |
           zcoop |   .5054177   .0940767     5.37   0.000     .3210307    .6898047
     zformal_edu1 |   .2160542   .0677725     3.19   0.001     .0832225    .3488858
      zliv_period |   -.003425   .0723789    -0.05   0.962     -.145285     .138435
           zctype |  -.2340987   .0724543    -3.23   0.001    -.3761064    -.092091
            _cons |  -.1929334    .063344    -3.05   0.002    -.3170853   -.0687816
-----------------+------------------------------------------------------------------
zcoop            |
          ztrust |   .0967235   .1203681     0.80   0.422    -.1391937    .3326407
         znneigh |   .7671623   .0407459    18.83   0.000     .6873017    .8470229
       zlogincom |   .3149821   .0348383     9.04   0.000     .2467003    .3832638
  zmfi_mem |   .0918586   .0377618     2.43   0.015     .0178469    .1658703
            zage |   .1384578   .0310913     4.45   0.000     .0775199    .1993956
```

```
        zlandown |  -.0256091   .0337624    -0.76   0.448    -.0917821    .0405639
       zlognbexp |   .0421307   .0346361     1.22   0.224    -.0257548    .1100162
           _cons |    .090385   .0356434     2.54   0.011     .0205253    .1602448
-----------------+------------------------------------------------------------------
ztrust           |
       zlogasset |   .1710583   .0758192     2.26   0.024     .0224554    .3196612
            zage |   .1452377   .0632564     2.30   0.022     .0212574    .2692179
         mfi_mem |   .3756253   .1485628     2.53   0.011     .0844477     .666803
       zlogincom |   .1717946   .0722539     2.38   0.017     .0301794    .3134097
        ztot_mem |  -.0887207   .0634338    -1.40   0.162    -.2130486    .0356072
       zcity_cat |   .0876067   .0768087     1.14   0.254    -.0629355     .238149
           _cons |  -.0819052   .1020971    -0.80   0.422    -.2820118    .1182015
-----------------+------------------------------------------------------------------
zr_incomeloss    |
       zlogasset |  -.3056213    .058632    -5.21   0.000    -.4205378   -.1907048
           _cons |  -.1017002   .0556728    -1.83   0.068     -.210817    .0074165
-----------------+------------------------------------------------------------------
zr_eviction      |
       zlogasset |  -.5362852   .0535212   -10.02   0.000    -.6411849   -.4313854
           _cons |   .3816352   .0502866     7.59   0.000     .2830752    .4801952
-----------------+------------------------------------------------------------------
zlogincom        |
       zlogasset |   .3173838   .0596655     5.32   0.000     .2004416     .434326
           _cons |   -.237863   .0558794    -4.26   0.000    -.3473847   -.1283414
------------------------------------------------------------------------------------
Endogenous variables:  zlev_fcoop_neihg zcoop ztrust zr_incomeloss
     zr_eviction zlogincom
Exogenous variables:   zformal_edu1 zliv_period zctype znneigh zmfi_mem zage
     zlandown zlognbexp zlogasset mfi_mem ztot_mem zcity_cat
------------------------------------------------------------------------------


. gsem ($y1list<-$y2list $x1list)($y2list<-$y3list $x2list)($y3list<-$y4list $x3list)
($y4lis
> t->$x4list)

Iteration 0:   log likelihood = -10246.745
Iteration 1:   log likelihood = -10246.745

Generalized structural equation model             Number of obs   =       1784
Log likelihood = -10246.745

------------------------------------------------------------------------------------
                     |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------------------+--------------------------------------------------------------
zlev_fcoop_neihg <-  |
               zcoop |   .2770049   .0750588     3.69   0.000     .1298924    .4241174
         zformal_edu1 |   .2212731   .0695519     3.18   0.001      .084954    .3575922
          zliv_period |   .0703662   .0705749     1.00   0.319     -.067958    .2086904
               zctype |  -.2188568   .0742428    -2.95   0.003    -.3643699   -.0733437
                _cons |    -.19242   .0630783    -3.05   0.002    -.3160511   -.0687889
---------------------+--------------------------------------------------------------
zcoop <-             |
              ztrust |   .3001543   .0141369    21.23   0.000     .2724465    .3278621
           zlogincom |   .2380195   .0157753    15.09   0.000     .2071006    .2689384
             znneigh |   .6820323   .0153336    44.48   0.000     .6519789    .7120856
            zmfi_mem |   .0383239   .0155159     2.47   0.014     .0079132    .0687346
                zage |   .1029447   .0163455     6.30   0.000     .0709081    .1349812
            zlandown |  -.0313228   .0165214    -1.90   0.058    -.0637042    .0010586
           zlognbexp |    .071003   .0191416     3.71   0.000     .0334862    .1085197
               _cons |   .0719877   .0162546     4.43   0.000     .0401293    .1038461
---------------------+--------------------------------------------------------------
ztrust <-            |
           zlogincom |   .1429902   .0259769     5.50   0.000     .0920765    .1939039
           zlogasset |   .1296476   .0256042     5.06   0.000     .0794643    .1798308
                zage |   .1761926   .0248318     7.10   0.000     .1275233     .224862
             mfi_mem |   .2436874   .0529466     4.60   0.000     .1399139    .3474609
            ztot_mem |   .0719959   .0248386     2.90   0.004     .0233132    .1206787
           zcity_cat |   .1333262   .0246897     5.40   0.000     .0849354    .1817171
               _cons |  -.0789159   .0286651    -2.75   0.006    -.1350984   -.0227334
---------------------+--------------------------------------------------------------
       _cons |   -.001356   .0231415    -0.06   0.953    -.0467126    .0440005
---------------------+--------------------------------------------------------------
```

```
zr_eviction <-         |
             zlogasset |  -.3283601   .0224302   -14.64   0.000    -.3723225   -.2843978
                 _cons |  -.0002651   .0224452    -0.01   0.991    -.0442568    .0437266
-----------------------+------------------------------------------------------------------
zlogincom <-           |
             zlogasset |   .3861347   .0218536    17.67   0.000     .3433025     .428967
                 _cons |   .0034378   .0218518     0.16   0.875     -.039391    .0462667
-----------------------+------------------------------------------------------------------
var(e.zlev_fcoop_neihg)|   .9070124   .0786489                      .7652508    1.075035
          var(e.zcoop)|   .1915931   .0095028                      .1738447    .2111536
         var(e.ztrust)|   .8639963   .0303237                       .806561    .9255215
   var(e.zr_incomeloss)|   .9462664   .0318354                      .8858829    1.010766
     var(e.zr_eviction)|   .8922028   .0299826                      .8353315    .9529461
       var(e.zlogincom)|   .8404056   .0283301                      .7866741    .8978069
------------------------------------------------------------------------------------------
```

D7.2 B Social capital is codetermined (the case of financial cooperation from neighbours)

```
. reg $y1list $y1list2 $y2list $x1list

      Source |       SS       df       MS              Number of obs =     471
-------------+------------------------------           F(  5,   465) =   11.62
       Model |  52.7961233     5  10.5592247           Prob > F      =  0.0000
    Residual |  422.381541   465  .908347399           R-squared     =  0.1111
-------------+------------------------------           Adj R-squared =  0.1016
       Total |  475.177664   470  1.01101631           Root MSE      =  .95307

------------------------------------------------------------------------------
zlev_fcoop~g |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 zftrust_nei |  -.0078853   .0477694    -0.17   0.869     -.101756    .0859854
       zcoop |   .1406779   .0501949     2.80   0.005      .042041    .2393147
zformal_edu1 |   .2585297   .0507308     5.10   0.000     .1588396    .3582197
 zliv_period |   .1400526   .0499224     2.81   0.005     .0419513     .238154
      zctype |  -.1998236   .0504335    -3.96   0.000    -.2989294   -.1007178
       _cons |  -.0013144    .046052    -0.03   0.977    -.0918102    .0891815
------------------------------------------------------------------------------


. reg3 ($y1list=$y1list2 $y2list $x1list)($y2list=$y3list $x2list)($y3list=$y4list $x3list)
(
> $x4list=$y4list) ($y1list2= $y3list $y4list $x1list2)

Three-stage least-squares regression
------------------------------------------------------------------------------
Equation          Obs  Parms        RMSE    "R-sq"       chi2        P
------------------------------------------------------------------------------
zlev_fcoop~g      252      5    1.258477   -0.5695      79.63   0.0000
zcoop             252      7    .4479162    0.7253     662.59   0.0000
ztrust            252      6    1.041555    0.0959      31.89   0.0000
zr_incomel~s      252      1     .881187    0.0701      19.42   0.0000
zr_eviction       252      1    .8192001    0.2551      86.75   0.0000
zlogincom         252      1    .9025744    0.0859      23.97   0.0000
zftrust_nei       252      3    .9805349   -0.0871      14.54   0.0023
------------------------------------------------------------------------------

------------------------------------------------------------------------------
                 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----------------+------------------------------------------------------------
zlev_fcoop_neihg |
     zftrust_nei |  -.8756345   .2161808    -4.05   0.000    -1.299341    -.451928
           zcoop |   .6018034   .0956254     6.29   0.000     .4143811    .7892258
    zformal_edu1 |   .2420578   .0769948     3.14   0.002     .0911507    .3929648
     zliv_period |  -.0826088   .0738666    -1.12   0.263    -.2273847    .0621671
          zctype |  -.1961918    .074574    -2.63   0.009    -.3423541   -.0500295
           _cons |  -.0215299   .0907868    -0.24   0.813    -.1994688    .1564089
-----------------+------------------------------------------------------------
zcoop            |
```

```
          ztrust |   .1089576   .1218949     0.89   0.371    -.1299521    .3478673
        znneigh |    .764005   .0418442    18.26   0.000      .681992    .8460181
      zlogincom |   .3101939   .0361159     8.59   0.000      .239408    .3809798
       zmfi_mem |   .0986353   .0394316     2.50   0.012     .0213507    .1759198
           zage |   .1370812   .0318652     4.30   0.000     .0746265    .1995359
       zlandown |  -.0219217   .0352961    -0.62   0.535    -.0911008    .0472574
      zlognbexp |   .0437739   .0357803     1.22   0.221    -.0263542     .113902
          _cons |    .084117    .037509     2.24   0.025     .0106006    .1576334
----------------+------------------------------------------------------------------
ztrust          |
      zlogasset |    .184906   .0784755     2.36   0.018     .0310968    .3387152
           zage |   .1843368   .0641571     2.87   0.004     .0585911    .3100824
        mfi_mem |   .3940497   .1508776     2.61   0.009     .0983351    .6897643
      zlogincom |   .1684322   .0731904     2.30   0.021     .0249817    .3118826
       ztot_mem |  -.1353815   .0640768    -2.11   0.035    -.2609696   -.0097933
      zcity_cat |   .1173122   .0767128     1.53   0.126    -.0330421    .2676665
          _cons |  -.1027359   .1055779    -0.97   0.331    -.3096647    .1041929
----------------+------------------------------------------------------------------
zr_incomeloss   |
      zlogasset |  -.2579883   .0585384    -4.41   0.000    -.3727214   -.1432552
          _cons |  -.1456573   .0555099    -2.62   0.009    -.2544547   -.0368599
----------------+------------------------------------------------------------------
zr_eviction     |
      zlogasset |  -.5138613   .0551695    -9.31   0.000    -.6219915   -.4057311
          _cons |   .3745526   .0516051     7.26   0.000     .2734083    .4756968
----------------+------------------------------------------------------------------
zlogincom       |
      zlogasset |   .2986538   .0610049     4.90   0.000     .1790864    .4182212
          _cons |  -.2466436   .0568572    -4.34   0.000    -.3580817   -.1352056
----------------+------------------------------------------------------------------
zftrust_nei     |
          ztrust |   .4219449   .1464021     2.88   0.004      .135002    .7088878
      zlogasset |  -.1897599   .0677677    -2.80   0.005    -.3225821   -.0569376
   zformal_edu1 |   .0452053   .0642838     0.70   0.482    -.0807886    .1711992
          _cons |   .2141034   .0630432     3.40   0.001      .090541    .3376658
------------------------------------------------------------------------------
Endogenous variables:  zlev_fcoop_neihg zcoop ztrust zr_incomeloss
     zr_eviction zlogincom zftrust_nei
Exogenous variables:   zformal_edu1 zliv_period zctype znneigh zmfi_mem zage
     zlandown zlognbexp zlogasset mfi_mem ztot_mem zcity_cat
------------------------------------------------------------------------------


. gsem ($y1list<-$y1list2 $y2list $x1list)($y2list<-$y3list $x2list)($y3list<-$y4list
$x3list
> ) ($y4list->$x4list) ($y1list2<-$y3list $y4list $x1list2)

Iteration 0:   log likelihood = -12344.586
Iteration 1:   log likelihood = -12344.586

Generalized structural equation model             Number of obs   =       1784
Log likelihood = -12344.586

------------------------------------------------------------------------------
                     |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------------------+--------------------------------------------------------------
zlev_fcoop_neihg <-  |
                zcoop |   .2883269   .0752659     3.83   0.000     .1408086    .4358453
          zftrust_nei |   -.016312   .0635081    -0.26   0.797    -.1407856    .1081615
         zformal_edu1 |   .1922423   .0704845     2.73   0.006     .0540952    .3303894
          zliv_period |   .0734477   .0726258     1.01   0.312    -.0688963    .2157916
               zctype |  -.2057586   .0755631    -2.72   0.006    -.3538596   -.0576577
                _cons |  -.2345967   .0664571    -3.53   0.000    -.3648502   -.1043431
---------------------+--------------------------------------------------------------
zcoop <-             |
               ztrust |   .3001543   .0141498    21.21   0.000     .2724212    .3278874
            zlogincom |   .2380195    .015775    15.09   0.000      .207101    .2689379
              znneigh |   .6820323   .0153337    44.48   0.000     .6519787    .7120858
             zmfi_mem |   .0383239   .0155162     2.47   0.014     .0079127    .0687351
                 zage |   .1029447   .0163458     6.30   0.000     .0709076    .1349818
             zlandown |  -.0313228   .0165216    -1.90   0.058    -.0637045    .0010589
---------------------+--------------------------------------------------------------
ztrust <-            |
```

```
            zlogincom |   .1429902   .0259807     5.50   0.000     .0920691    .1939114
            zlogasset |   .1296476   .0256047     5.06   0.000     .0794633    .1798318
                 zage |   .1761926   .0248318     7.10   0.000     .1275233     .224862
              mfi_mem |   .2436874   .0529467     4.60   0.000     .1399138     .347461
             ztot_mem |   .0719959   .0248387     2.90   0.004      .023313    .1206789
            zcity_cat |   .1333262   .0246897     5.40   0.000     .0849353    .1817172
                _cons |  -.0789159   .0286651    -2.75   0.006    -.1350984   -.0227333
----------------------+------------------------------------------------------------------
zr_incomeloss <-      |
            zlogasset |  -.2187068   .0231228    -9.46   0.000    -.2640266    -.173387
                _cons |   -.001356   .0231415    -0.06   0.953    -.0467126    .0440005
----------------------+------------------------------------------------------------------
zr_eviction <-        |
            zlogasset |  -.3283601   .0224302   -14.64   0.000    -.3723225   -.2843978
                _cons |  -.0002651   .0224452    -0.01   0.991    -.0442568    .0437266
----------------------+------------------------------------------------------------------
zlogincom <-          |
            zlogasset |   .3861347   .0218536    17.67   0.000     .3433025     .428967
                _cons |   .0034378   .0218518     0.16   0.875     -.039391    .0462667
----------------------+------------------------------------------------------------------
zftrust_nei <-        |
               ztrust |   .0858373   .0247401     3.47   0.001     .0373475     .134327
            zlogasset |   -.096928   .0278844    -3.48   0.001    -.1515805   -.0422755
         zformal_edu1 |   .0818328   .0270548     3.02   0.002     .0288064    .1348592
                _cons |   .0233198   .0246045     0.95   0.343    -.0249042    .0715437
----------------------+------------------------------------------------------------------
var(e.zlev_fcoop_neihg)|   .8901343   .0791437                      .7477793     1.05959
          var(e.zcoop)|   .1915931    .009503                      .1738443    .2111541
         var(e.ztrust)|   .8639963   .0303241                      .8065603    .9255223
  var(e.zr_incomeloss)|   .9462664   .0318354                      .8858829    1.010766
    var(e.zr_eviction)|   .8922028   .0299826                      .8353315    .9529461
      var(e.zlogincom)|   .8404056   .0283303                      .7866737    .8978074
    var(e.zftrust_nei)|    .926416   .0334512                       .863119    .9943549
------------------------------------------------------------------------------------------
```

Appendix E: Major occupations of the poor household heads (%)

Year	Occupation	Dhaka	Chittagong	Kushtia	Khulna	Rajshahi	Sylhet	Barisal
2005	Transport worker	24.0	23.0	-	31.3	30.4	41.3	5.6
	Daylabour	18.6	25.3	-	32.0	32.8	29.1	54.3
	Factory worker	22.4	21.3	-	13.8	0.3	0.6	7.4
	Service	10.8	10.2	-	5.0	8.6	8.9	9.2
	Domestic worker	5.0	2.6	-	3.1	1.5	3.2	1.7
	Small business	10.1	9.4	-	9.5	20.3	6.1	14.0
	Hawker	3.7	1.5	-	1.9	0.6	2.3	2.3
2009	Transport & others	23.2	23.2	26.0	33.5	33.8	17.0	12.0
	Daylabour	4.1	2.8	7.0	8.0	0.7	4.0	2.0
	Service	21.5	22.4	9.0	19.0	18.5	7.0	17.0
	Domestic Worker	3.8	2.8	4.0	3.0	1.3	0	3.0
	Small business	38.5	43.2	39.0	24.0	40.4	49.0	50.0
	Rickshaw pulling	4.4	2.8	13.0	8.0	4.0	21.0	13.0
	No occupation	4.6	2.8	2.0	4.5	1.3	2.0	3.0
2014	Transport & others	12.7	14.8	13.0	-	-	-	-
	Daylabour	13.1	15.2	23.5	-	-	-	-
	Service	21.0	28.6	16.8	-	-	-	-
	Domestic worker	13.7	9.7	4.4	-	-	-	-
	Small business	16.8	14.4	27.5	-	-	-	-
	Rickshaw pulling	17.9	11.9	10.4	-	-	-	-
	No occupation	4.9	5.3	4.4	-	-	-	-

Source: CUS (2005); InM (2009; 2014)

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